Female Representation in the Academic Finance Profession

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ABSTRACT

We present new data on female representation in the academic finance profession. In our sample of finance faculty at top-100 U.S. business schools during 2009–2017, only 16.0% are women. The gender imbalance manifests itself in several ways. First, after controlling for research productivity, women hold positions at lower-ranked institutions and are less likely to be full professors. There is also evidence that they are paid less. Second, women publish fewer papers. This gender gap exists in research quantity, not quality. Third, women have more female coauthors, suggesting smaller publication networks. Time-series data suggest shrinking gender gaps in recent years.

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We present new data on female representation in the academic finance profession. The paper contributes to the rapidly growing literature examining the status of women in the economics profession (e.g., Lundenberg and Stearns (2019); Boustan and Langan (2019); Hengel and Moon (2020); Chari and Goldsmith-Pinkham (2018)) and to the vast literature on gender representation more broadly (see e.g., Ginther, Kahn, and McCloskey (2016) for a survey).[1] To date, there is no large-sample empirical evidence on gender balance and career outcomes in academic finance. Finance academia is a useful setting for an examination of these issues because it is a fairly well-defined area and faculty productivity is largely observable. The finance field is also historically male. In our sample of finance faculty from the top-100 U.S. business schools during 2009–2017, only 16.0% of them are women.[2]

Our analysis is primarily descriptive; however, the data point to at least three important forms of gender imbalance in the academic finance profession. First, when we examine the population of faculty during our sample period, we find that, after controlling for research productivity, women hold positions at lower-ranked institutions, they are less likely to have tenure than men, and they are less likely to be full professors. There is also some evidence that women are paid less than men during the 2009–2017 sample period. When we turn our focus to career trajectories of individual faculty members by examining career outcomes exactly X years post-Ph.D., the patterns are similar, but the gap is largest when we look at rank of institution and full professor status. We find less significant gender differences in the case of tenure, where we only find evidence of a gender gap at 6 years post-Ph.D.

Second, we find differences in the composition of the portfolios of papers written by women. Women publish fewer papers in number, but this gap is mainly due to fewer papers in

[1] See also Bayer and Rouse (2017) for a review of earlier papers in economics.

[2] This percentage is consistent with Chari and Goldsmith-Pinkham (2018), who report that women comprise 14.6% of all people on the finance programs at the NBER Summer Institute. This is the lowest female representation of all of the economics subfields that they report.

lower-tiered journals. The analyses of gender gaps in the rank of institution, tenure and full professor status, and salary all explicitly control for the number of publications of each faculty member; however, the quantity and composition of publications are of independent interest. This is because successful publishing records are strongly associated with positions at highly ranked institutions, higher rates of tenure, promotion to full professor, and lower rates of exit from the profession. We estimate a total publication gap between male and female faculty of approximately 17.3%. Publication gaps have been well-documented in economics and other broad fields (e.g., Bentley (2011); McPherson et al. (2013); Antecol et al. (2018); Ghosh and Liu (2020)), but our narrower focus on the finance subfield allows us to control for potentially important confounding factors. Closer examination of the quantity gap reveals that it is mainly driven by publications that are not in top journals, especially those that are coauthored.[3] On average, we do not find a significant difference between men and women in the number of solo publications or top publications. The latter finding is consistent with no difference in the quality of papers written by women. If anything, using citations as a proxy for quality, we find evidence that the quality of papers written by women is higher than it is for men. This is in line with Card et al. (2020), who report that female-authored papers receive 25% more citations than otherwise similar male-authored papers and with Hengel and Moon (2020) who report that in top economics journals, articles that are authored by men are cited less than articles authored by women.

Our third finding is related to coauthorship on published papers. On average, women tend to have fewer coauthors than their male colleagues. The finding that women tend to have smaller networks of successful collaborations is not particularly surprising, given that women tend to publish fewer papers. But, consistent with findings in economics (e.g., McDowell, Singell and Stater

[3] We define top publications as papers published in the top-3 finance journals and the top-5 economics journals. The top-3 finance journals are *Journal of Finance*, *Journal of Financial Economics*, and *Review of Financial Studies*. The top-5 economics journals are *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Review of Economic Studies*, and *Quarterly Journal of Economics*.

(2006); Boschini and Sjogren (2007)), we also find that women in finance tend to have *more* female coauthors than their male colleagues. Our finding is in line with AFFECT (2018) that, if the first author on a published paper in finance is female, that paper is more likely to have another female coauthor.[4] Given the fact that the finance profession is only 16.0% female during our sample period, both of these complementary findings suggest that women have smaller publication networks. We also find that women have fewer coauthors from within their own Ph.D. cohorts, which may indicate a social networking constraint and could be relevant if coauthor seniority is considered in promotion cases.

The career outcomes that we document could be driven by factors that have been found to affect the status of women in other fields, such as child-rearing policies (Antecol, Bedard and Stearns (2018)), time and family considerations (Goldin (2014); Ginther (2006); Ginther and Hayes, (1999)), discrimination and stereotypes (Nosek et al. (2009); Reuben, Sapienza and Zingales (2014), or psychological attributes such as risk tolerance and attitudes towards competition (Bertrand (2018)). We emphasize that, while unfair treatment of women is one potential explanation for our findings, it is not the only one. We do not take a stand on the question of what drives gender disparities. The main goal of this paper is to present basic facts that might motivate additional work to uncover the mechanisms that drive the differences that we observe in the data.

The three main findings highlighted above might, at face value, suggest a poor outlook for women entering the profession. A closer look at the year-by-year regressions reveals a more optimistic picture. When we examine relationships between gender and various measures of success within the population of finance for each year, the gender gap (i.e., imbalance that cannot be explained by differences in observable productivity or seniority) shrinks or even disappears during the last years of the sample. By the last years of the sample, we are finding that research productivity (and not gender) explains most of the variation in where a faculty member is employed, whether the faculty member has tenure, or exits the profession. These changes are occurring at the same time

[4] AFFECT (2018) is different from our analysis in that their focus is at the publication rather than individual faculty level, and some of the results could be driven by particularly prolific women.

that we observe another slow-moving trend in the data: more women are entering the profession and obtaining tenure. Of the faculty who have tenure during the entire 2009–2017 sample period, 9.7% are women. Of the faculty obtaining tenure during the sample period, 24.3% are women. And 20.4 % of rookie new hires (i.e., 2009–2017 graduates where PhD year equals the first year of employment as an assistant professor) are women.

The conditions for women taking a first tenure track job in finance appear to be improving over time; however, there are two important exceptions. First, unlike in economics (Antecol, Bedard and Stearns (2018); Ghosh and Liu (2020)) we do not observe shrinking differences between men and women in publication rates. Second, even after controlling for publications, we find more persistent gender gaps at the very top of the academic ladder (i.e., among full professors, which is driven by differences among faculty at 16 or more years post-PhD).

The literature offers much discussion about the "leaky pipeline," in which the representation of women declines at each phase in the progression from student to tenure (for a survey of the literature and interventions, see Buckles (2019)). To identify the most important sources of underrepresentation of women in the academic finance profession, we would ideally track people from the very beginning phases of their academic careers: PhD applicants, admitted PhD students, graduates from PhD programs, initial academic placements, and subsequent tenure rates. Although our data do not allow us to comment on each of these important phases of the academic career, we are able to shed some descriptive light on the source of potential leaks in the pipeline after one obtains a tenure track job. If the low representation of women in finance were due entirely to the small numbers entering the profession from Ph.D. programs (i.e., a pipeline issue), then the women who do enter finance academia would see their careers progress along trajectories that are similar to men. That is, we would not observe important gender gaps in career outcomes after we control for research productivity.

The low representation of women in finance that we document could have implications beyond the careers of the faculty members that we study. For example, female faculty might serve as role models that impact the career choices of female MBA students. Consistent with this idea, Lim and Meer (2020) and Carrell et al. (2010) use randomization approaches to study whether female role

models increase female student interest and performance in traditionally male-dominated subject areas. Both of these papers report that female instructors positively impact the performance and future pursuits of women in the subject areas without changing the outcomes of men. If the same holds true in finance, then efforts to increase female representation in academic finance could have spillover effects in the broader finance industry.

The paper proceeds as follows. In Section I, we describe the data and sample selection. In Section II, we provide comparative descriptive statistics on placement, rank, and research productivity. In Section III, we present regression results. Section IV concludes.

I. Data

A. School Ranking

We begin with the *U.S. News & World Report* Best U.S. Business Schools rankings for every year from 2009 to 2017. We define a top-100 school as any school that appears in the top-100 rankings at any point during the 2009–2017 period. U.S. News & World Report assigns low values to higher ranked schools (e.g., a ranking of 1 maps to the highest ranked school, while a value of 15 maps to the school with the 15th highest rank).

B. Business School Faculty Rosters

To construct annual rosters of finance faculty, we merge the *U.S. News & World Report*'s top-100 list with the faculty roster data that we obtained from Academic Analytics (AcA). AcA collects and disseminates (on a subscription basis) information on faculty and research activity of faculty at more than 400 universities across most departments and schools in the United States. The AcA faculty rosters come from two sources: direct submissions from universities and snapshots of university websites as of November 1 of each calendar year. AcA provided us with a directory of business school faculty for the years 2009–2017. The data include all faculty names, faculty titles, names of the institutions at which faculty are employed, the names of institutions from which faculty received their PhDs, and PhD year. We focus the analysis on ladder faculty (i.e., those with the title of "Assistant Professor," "Associate Professor," or "Professor"). For an institution to be

included in the sample, we require both a *U.S. News & World Report* top-100 ranking at any point during the sample period and AcA coverage of that institution in at least one year from 2009 to 2017. This filter results in 97 "top-100" business schools, all of which are listed in Table I.[5]

[Insert Table I here]

C. Finance Faculty

From the AcA list of ladder business school faculty, we need to identify the subsample of finance scholars. AcA classifies faculty by subfield: finance, accounting, business administration, business various, management, management information systems, and marketing, but these classifications are noisy. While they are usually consistent, we encounter two issues with the AcA classifications. First, the classification can vary across years for the same individual. Second, some finance faculty are listed in other subfields and some non-finance faculty have finance designations. Misclassification could result from, for example, multiple subject area listings on business school websites. If a faculty member is identified as finance faculty at least once during our sample period

[5] There are 88 schools for which the AcA roster data are complete for the entire sample period. For the remaining 9 schools, we hand-collect rosters from snapshots of business school websites using the internet's Wayback Machine. Incomplete coverage occurs most often during the first half of the sample period. The schools with incomplete coverage in AcA are: Babson College, Brigham Young University, Chapman University, Georgetown University, Northeastern University, Northern Arizona University, San Diego State University, Stevens Institute of Technology, and University of California (Riverside). As a group, these schools do not differ systematically from the full sample in their gender representation or average ranking. We do, however, find that their historical websites are particularly difficult to navigate. This may explain the incomplete coverage in AcA.

and if that person is not also classified as accounting faculty, we assign that person to the initial list of finance faculty. We then refine the list, using publication and CV information.

Starting with the initial list of finance faculty, we create four groups of faculty for which we hand check the official school websites, faculty members' CVs and/or public LinkedIn pages to determine whether they should be classified as finance. Group 1 consists of all faculty who do not have an initial finance assignment but have more than 25% of their papers published in a Tier A or a Tier B finance journal (as defined in Currie and Prandher (2011)).[6] Group 2 comprises all recent graduates (those with graduation years 2009 or later) who do not have an initial finance assignment and have zero publications. Groups 1 and 2 help to detect finance faculty that are not classified as finance in AcA. Group 3 comprises all faculty initially classified as finance but who do not have at least 5 of their publications in a Tier A or a Tier B finance journal or at least 3 of their publications in a Top 3 finance journal (these are the *Journal of Finance*, *Journal of Financial Economics* and *Review of Financial Studies*). Group 4 are all faculty with zero publications but have an initial finance classification.[7] Groups 3 and 4 help us detect non-finance faculty who are misclassified as finance in

[6] These are *Journal of Finance*, *Review of Financial Studies*, *Journal of Financial Economics*, *Journal of Financial and Quantitative Analysis*, *Journal of Money, Credit and Banking*, *Journal of Banking and Finance*, *Mathematical Finance*, *Journal of Financial Intermediation*, *Journal of Corporate Finance*, *Financial Management*, *Journal of Empirical Finance*, *Journal of International Money and Finance*, *Journal of Financial Markets*, *Financial Analysts Journal*, *Review of Finance*, *Journal of Risk and Insurance*, *Quantitative Finance*, *Journal of Financial Research*, *Journal of Futures Markets*, *Journal of Portfolio Management*, *Journal of Business Finance and Accounting*, *Finance and Stochastics*, *Financial Review*, *Journal of Derivatives*, *Journal of International Financial Markets, Institutions and Money*, and *Journal of Real Estate Finance and Economics*.

[7] We also hand check the CVs of faculty members who appear to be visitors. AcA generally does not include visiting faculty; however, in a few cases, AcA data incorrectly assigns visitors as full-time faculty. Potential

AcA. As a result of this process of refining the finance faculty classifications, we identify 2,011 unique finance faculty members employed by the sample of the top-100 schools during 2009–2017.[8] We emphasize that all of the analysis conditions on having a job at a top-100 school at some point during the sample period. We do not observe individuals with PhDs who do not take jobs at these institutions.

D. Tenure and Full Professor Status

AcA assigns tenure status for all faculty with an "Associate Professor" or a "Professor" title, consistent with the policies at the majority of institutions. We use the "Professor" title to infer full professor status. Tenure is more complicated because several schools have both tenured and untenured associates (and there are a couple in which all associates are untenured). We use a variety of sources to refine the AcA tenure status classification for these schools. First, we check the faculty handbooks of all top-100 business schools to determine whether there are both tenured and untenured associate professors as well as term limits. Nineteen schools have both tenured and untenured associates, and the tenure status of 33 individuals is ambiguous based on title. For these individuals, we first perform an internet search for the faculty member's CV. Many of these faculty (approximately 50% of cases) indicate on their CVs the year in which they obtain tenure. Second, if tenure year is missing from the CV and if the faculty member is from a top-50 program during 2009–2014 (the subsample in Brogaard, Engelberg, and Van Wesep (2018) that overlaps with our

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visiting faculty members are those who remain at a given institution for only one year. We also hand-check CVs when faculty remain at a given institution for two years before returning to their previous institution.

[8] Our classification system, along with potentially incomplete coverage in AcA, could possibly cause us to include some faculty who are not finance faculty and to exclude some faculty who are, indeed, finance scholars. Our hand checks of the data help mitigate these concerns. And, as long as the gender balance of the subsamples of incorrectly included or excluded faculty are similar to that of the full sample, we do not expect misclassification errors to bias our findings.

data), we use the tenure status variable from Brogaard, Engelberg, and Van Wesep (2018). In cases in which CVs and Brogaard, Engelberg, and Van Wesep (2018) methods fail to identify the tenure year, we rely on the AcA tenure flag.

We hand-check the CVs of all individuals with an AcA title change during the sample period to confirm the year of the title change. We rely on faculty web pages and/or public LinkedIn pages when CVs are unavailable. In some cases, the AcA title change appears one year later than the title change reported on the CV. In those cases, we rely on the title change year from the CV. When the CV title change year is unavailable, we rely on the AcA title dates.

E. Research Output

We rely on the Scopus database at Scopus.com for faculty publications and citations data. The Scopus data include a unique author identifier, the article's title, the journal's name, coauthor names, the date of publication, and citations data.[9] We merge the AcA roster and Scopus by faculty name and institution. For multiple potential matches or when we are unable to match on name and institution, we match on name and then hand check the Scopus publications against the faculty member's CV. To minimize the potential for errors in name matching, we examine only those publications from the Scopus journals in the following areas: Economics, Econometrics and Finance; Business, Management and Accounting; and Decision Sciences. [10] We limit to these areas because, in a couple of cases, faculty with very common names are given credit for publications in

[9] Some faculty change their names. We examined Scopus for name changes, and we find that the author ID generally preserves name changes.

[10] The list contains 2,694 journal titles, including all of the major finance, economics, accounting, and marketing outlets. Although our approach would miss a publication by a finance faculty member in, for example, *Nature*, such publications are sufficiently rare and the error that we introduce is likely to be smaller than the error that we introduce by potentially misattributing science journal articles to finance faculty.

science journals by faculty members with the same name but who are in different departments at the same institution.

Journal publications are the main measure of output, because, like other subfields in economics, finance is an articles-based field. We use publications through year *t* in the various regressions of year *t* outcome variables. We do so because publication lags are such that most publications are known to authors and their employers well in advance of actual publication dates.

F. Gender

AcA uses genderize.io to infer faculty gender using the faculty member's first and middle names. Whenever the gender probability is greater than 90%, based on genderize.io, gender is provided in the AcA. Gender is missing for 382 individuals. Because of the importance of gender in our context, we hand-check the gender variable to fill in missing gender and to make any appropriate corrections.[11] This process results in gender classification for all but two faculty members, leaving a sample of 2,009 unique faculty members for the analysis.

G. Transitions

To characterize faculty exits, we conduct a CV search for the first employer after the faculty member exits the sample. When we are unable to locate a CV, we relied on public LinkedIn pages and university websites on the Way Back Machine. Faculty leave the sample for several reasons: transition to a nontenure track position, such as Lecturer; accepting a job in government or the private sector; transition to a university outside of the top-100 U.S. business schools, such as a non-U.S. school; moving to an economics department; moving to a lower-tiered business school; retirement; or death. Our sample contains 364 exits, 79 of which are exits to government, the private sector, or nonladder positions.

[11] Gender is missing or incorrect in AcA for approximately 19% of the sample. We conduct the hand-checking in two stages. First, we examine the faculty member's photograph on the university's website. If the photo is unavailable, we rely on pronouns used on the RateMyProfessor website to infer gender.

H. Salary (Public Institutions)

We obtain salary data for faculty at 37 of the 60 public institutions in the sample. Most states have Freedom of Information Acts that require public employers to provide salary information for all employees. We submitted data inquiries to all 60 institutions, and we include salary data from all schools that sent usable data in response to our requests. We merge the salary data with AcA data based on institution, faculty name and department (where department is available). We obtain salary and total compensation information for 4,123 faculty-year observations. Because most schools report 9-month salaries rather than total compensation, we focus on the 3,614 observations for which we have non-missing 9-month salary data.[12]

II. Comparative Descriptive Statistics

A. Gender Composition of Finance Faculty

Table II summarizes the gender composition of finance faculty. The sample of top-100 schools during the 2009–2017 period contains 2,009 individual unique faculty members, of which 16.0% are women. In addition to the full sample of the top-100 schools, Table II shows the gender composition for the subsample of the top-30 and top-10 institutions (based on *U.S. News & World Report* rankings), as well as institutions in the first quartile of research productivity, public institutions, and private institutions. The percentage of female faculty declines at top programs. The

[12] We treat as missing the 7 observations in which reported salaries are zero, as well as salaries in which we observe large (>40%) year-to-year increases or decreases for the same individual. This can occur because salaries are reported for calendar (and not academic) years. Individuals receive only a fraction of the 9-month salary during the first or last calendar year of employment. To reduce the influence of outliers, we winsorize the remaining salary data at the 0.5% and 99.5% levels.

percentages of female faculty at the top-30 and top-10 institutions are 14.3% and 13.1%, respectively. Public institutions tend to have more female faculty than do private institutions.

[Insert Table II here]

Figure 1 illustrates the very slow changes in the composition of faculty. In 2009, the sample is 14.9% female, and, by 2017, this percentage rises to 16.8%. By comparison, women accounted for 19.7% of all economics faculty in 2009 and 23.1% in 2017 (CSWEP, 2019).[13] Female representation in finance lags economics, and both lag the overall population of college and university faculty. AAUP (2019) reports that women made up 40.1% of full-time college and university faculty across all disciplines in 2008-2009 and 44.8% of all faculty in 2018-2019.[14]

[Insert Figure 1 here]
[Insert Figure 2 here]
[Insert Figure 3 here]

In finance, the changes in female representation have been somewhat faster among tenured faculty, as depicted in Figure 2. In 2009, 10% of the sample of tenured faculty are women. By 2017, that number rises to 14.8%. Despite the slow change in the total fraction of faculty who are female, we are observing important changes in the gender balance among newly tenured faculty. In particular, of the 1,058 faculty who have tenure for all years of our sample, only 9.7% are women,

[13] Committee on the Status of Women in the Economics Profession, Annual Report (December 2019).

[14] AAUP (2019), The Annual Report on the Economic Status of the Profession, 2018–19.

but women comprise 24.3% of the 309 faculty obtaining tenure and 19% of the faculty promoted to Full Professor during our sample period.[15,16]

The gender balance has been stickier at the new assistant professor ranks. Women comprise 20.4% of recent graduates (faculty with graduation dates from 2009 onward), and Figure 3 shows only a small increase over time in the fraction of women graduates that are entering the sample each year.

The faculty in our sample come from a wide range of PhD institutions. Internet Appendix Table I shows each institution in the sample, along with the fraction of graduates from our sample of top 100 schools that are female.[17] Women do not appear less likely to graduate from top programs; however, they do come from a more dispersed set of programs.[18] Differential dispersion might be important if research networks stem from graduate schools.

B. Faculty Publications

[15] These numbers line up with those of Fishe (1998). The focus of that paper is on promotion to full professor, but the female representation is consistent: of the 51 full professors at top 20 departments from 1980 to 1991, we count 4 (i.e., 8%) women; of the 68 promoted full professors at departments ranked 21–96, 7 (10%) are women.

[16] On average, men obtain tenure somewhat earlier in their careers than do women (especially at top schools). Our data are based on calendar time and not tenure clock time, so it is possible that maternity leaves and differential use of child-rearing leaves factor into this difference. The additional time for women to obtain tenure in our sample is shorter than the findings in Kahn (1993). However, the author concentrates on both economics and management fields and uses older data, from 1970 to 1989.

[17] The Internet Appendix is available in the online version of this article on *The Journal of Finance* website.

[18] See Internet Appendix Figures IA.1 and IA.2.

Finance is an articles-driven field. If research productivity determines placement and promotion, then publication differences between men and women can shed some light on why female representation within the profession is low, especially in top programs.

Table III summarizes the publication records of male and female faculty. In interpreting the data, it is important to emphasize that women tend to be newer to the profession than men. In our sample of faculty-year observations, the mean number of years since obtaining a PhD is 18.5 for men, and it is 12.1 for women. Still, the patterns in the table can be informative.

[Insert Table III here]

The summary statistics in Table III show that female faculty have fewer publications than males: the average female in our sample has approximately 51% (7.24/14.33) of total publications compared with the average male. This publication difference is particularly high at lower-tiered journals.[19] When we consider only the top-3 finance and top-5 economics journals, the average female publication ratio jumps to 61% (2.83/4.64) of the total top publications of the average male. When we condition on tenure status, the year in which the person receives tenure, the year in which the person is promoted to full professor, or when we focus on the subsample of recent graduates, the ratio of female publications to male publications increases even further, but it generally remains less than 1 (with the exception of top-10 and top-30 programs, where women have slightly more top solo-authored publications than men by their tenure year). Not surprisingly, the number of top publications for both men and women are higher at top schools. In the regression analysis that

[19] *Total Publications* includes all publications in journals in the Scopus Business and Economics category. *Top Publications* are all publications in the top-3 finance journals and in the top-5 economics journals (footnote 3 lists the top journals in each field). *Top Solo-Authored Publications* are all top publications that are solo authored, and *Other Solo-Authored Publications* are all solo-authored publications that are not in a top journal.

follows, we control for years since PhD and the institution at which the faculty member is employed to help clarify the interpretation of the differences that we observe in Table III.

Publication records are an important indicator of faculty productivity, but the publication record data in Table III and in the regressions that follow come with an important caveat. We do not observe productive activities outside of publications. Differential engagement in non-research tasks can possibly explain some of the gender differences in the publication rates that we observe. Babcock, et al. (2017) report that women, more than men, volunteer for tasks that benefit the organization rather than their individual career advancement prospects. Winslow (2010) reports that female faculty spend more time on teaching. Guarino and Borden (2017) provide survey evidence that female faculty engage in more service activities than do men. El-Alayli, Hansen-Brown, and Ceynar (2018) report that students perceive female professors to be more nurturing. They argue that this perception can lead to more burden for female professors. If similar patterns exist among finance faculty, then the publications-based measures of productivity for women are biased downward. If non-research services are valued, this would bias toward results that indicate more favorable outcomes for women in the regressions that condition only on publication records.

III. Regression Analysis

Before turning to the regressions, we emphasize that the paper is primarily descriptive. The regressions allow us to control for important variables such as cohort and institution fixed effects. Our objective is to provide a comprehensive view of the status of women in the academic finance profession, but we are unable to make strong causal statements. In addition, because our data cover only 9 years, we do not follow faculty through their entire careers. This means that survivorship is a concern, especially among the population of more experienced faculty. To help address it, and to aid in the overall interpretation, we supplement the cross-sectional regressions with analyses of exit patterns among recent graduates.

In the career outcome analyses that follow, we take two complementary approaches to analyzing potential gender differences in the rank of the institution at which the individual is employed, tenure, and full professor status. First, to study the entire sample of finance faculty, we

run year-by-year cross-sectional regressions of career outcomes on gender and various controls. These analyses allow us to make statements about the population of finance faculty during the sample period. Second, we examine career trajectories at the individual faculty level. Recently, Heckman and Moktan (2020) study tenure outcomes by the end of the first spell of employment and Sarsons et al. (2021) examine tenure outcomes by exactly 6-8 years after initial appointment to a tenure track position. In the spirit of these recent papers on tenure and promotion in economics, we ask the following question: conditional on having a position at a top-100 school at some point during our sample period, what is the rank of the institution at which the person is employed, the likelihood of having tenure, and the likelihood of being a full professor by year *X* post-PhD? We define *X* at different windows, depending on the career outcome of interest (for example, *X*=6, 8, 10, and 12 years post-PhD for the tenure analyses, while *X*=10, 12, 14, 16, 18, and 20 years post-PhD for the full professor regressions).

Internet Appendix Table IA.II provides summary statistics for all of the variables that we use in the regressions. Along with the faculty-level findings from Tables I and II and Figures 1 through 3, the unconditional means in Table IA.II show greater employment of women by lower-ranked institutions; lower tenure rates among female faculty; and somewhat lower salaries for women compared to men. We provide more formal analyses of these in the regression analyses that follow.

A. Rank of Institution

Table II suggests that women are underrepresented in the profession, especially at top-ranked schools. We begin this section with a more formal analysis of the representation of women among the top-100 programs.

Table IV presents results of cross-sectional regressions in which the dependent variable is the *Institution rank*, defined as the mean *U.S. News & World Report* ranking during each year of the 2009–2017 sample period. These regressions offer an initial look at potential gender differences in the composition of faculty at top 100 business schools as one varies the rank of institution. The explanatory variable of interest is *Female*, a dummy equal to one if the faculty member is female. We

also control for rank in the profession (*Tenured*, a dummy equal to one if the faculty member has tenure during year *t*); professional experience (*YearsSincePhD*, the number of calendar years since the faculty member earned a PhD); status in the profession/subfield popularity (*Citations*, defined as ln(number of citations+1)); and research productivity (*Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications). We take natural logs of the citation and publication variables following Heckman and Moktan (2020) and Sarsons et al. (2021). We distinguish top publications to account for the findings in Heckman and Moktan (2020), who report that publishing in top journals predicts career outcomes in economics. We estimate pooled regressions using data for the entire 2009–2017 sample period, and we cluster standard errors by year and unique faculty identifier.

[Insert Table IV here]

Table IV reveals that, after controlling for research output, women faculty tend to hold positions at lower-ranked schools during most years that we study. Recall that lower values of *institution rank* are associated with higher school ranking (for example, a value of 1 maps to the highest ranked school). In Column (1) of Table IV, the estimated coefficient of 6.443 on the *Female* dummy (significant at the 1% level) implies that for the year 2009, all else equal, women held jobs at schools ranked more than 6 places lower than male faculty. By 2014, we estimate a gender gap of 4 rankings. Rankings are noisy, a 4 rank difference between many of the schools in Table I may not be very large in magnitude in some cases. However, we should also note that Heckman and Moktan (2020) consider movement of 5 ranks from one's current institution to be a significant move. Moreover, the directional result is clear, as is a trend: Figure 4 shows a steady decline in the estimated gender gap over time. In 2017, the coefficient is 0.778 and is statistically indistinguishable

from zero. The difference in the estimated coefficients in 2009 versus 2017 is significant at the 1% level.[20]

[Insert Figure 4 here]

The coefficients on the other control variables in Table IV also deserve mention. Not surprisingly, we find that faculty with more citations and top publications are at higher-ranked schools. And more publications that are not in top journals are associated with employment at a lower-tiered school.

In the second approach, we focus on the rank of the institution at which an individual is employed at exactly *X* years post-PhD, where *X*=1, 4, 8, 12, and 16 years. To be included in the sample the 1-, 4-, 8-, 12-, and 16- year post-graduation dates must occur during 2009–2017 sample period (thus, the analyses include only graduates between 1993 and 2016, and the exact sample depends on the value of *X*). Each regression includes only one observation per faculty member. Results are in Table V. Consistent with Figure 4 and with Table IV, we observe a significant gender gap in the rank of institution at each value of X, with the exception of *X*=1. The economic magnitude of the gender gap at the 4, 8, 12, and 16 year marks varies from 6.4 to 9.6 ranks. At the one year mark, the estimated coefficient is much smaller (1.6) and is statistically insignificant. The faculty included in this sample obtained their PhDs between 2008 and 2016, which may indicate a shrinking placement gap among very recent graduates.

[Insert Table V here]

Taken together, the results in Figure 4 and in Tables IV and V show a gender gap in placement that is shrinking over time. Any observed gaps could be the result of discrimination. They could also be the result of faculty preferences. For example, joint career decisions might

[20]The average gender gap in institution rank shown in Table IV is driven by untenured faculty members during the first two thirds of the sample period (Internet Appendix Table IA.III).

differentially impact the personal constraints and geographical preferences of women. It might be that women make different tradeoffs than men and choose lower ranked schools to fit with partners' careers. We do not examine these mechanisms.

In Tables IV and V, we define institution rank based on *U.S. News & World Report* rankings of MBA programs. This ranking is correlated with research ranking, but it is also true that the MBA rankings place substantial weight on variables such as recruiter assessments and MBA student placements and starting salaries. To address this potential concern, we construct an alternative ranking variable using faculty publication data. *Alternative Rank* is measured as the equal weighted average (across all sample years) of the mean number of top publications by individual finance faculty members at the institution. Internet Appendix Tables IA.IV and IA.V provide results of regression analyses that are analogous to those shown in Tables IV and V, respectively. Similar to the main tables: Table IA.IV shows a gender gap in placement during the first three years of the sample that becomes statistically insignificant in the later years; and Appendix Table IA.V shows a significant gender gap in research ranking of the employer at exactly years 4, 8, and 12 post-PhD.

Broadly consistent with our findings, Ghosh and Liu (2020) examine the rank of first placement within economics and find that women have a 9% lower probability of obtaining a first job in a US economics department. They do not, however, examine potential changes in the placement gap over time, as we do.

B. Tenure Status

Figure 2 reveals that less than 15% of the population of tenured finance faculty are female in every year of the sample. Table II shows that this gender imbalance among tenured faculty is present at both top schools and at lower-ranked ones. In interpreting the averages, it is useful to control for cohort effects (because women tend to be more recent graduates), as well as publication records.

Our focus is on understanding gender differences in tenure among all finance faculty. Similar to the institution rank analyses, we take two approaches in analyzing tenure status. First, we study the entire sample of finance faculty in each year of the sample period. Second, in the spirit of recent literature on tenure and promotion in economics (Sarsons et al. (2021); Heckman and Moktan

(2020)), we ask the following question: conditional on having a position at a top-100 school at some point during our sample period, what is the likelihood of having tenure by year *X* post-PhD? We define *X* as 6, 8, 10, and 12 years post-PhD for the tenure analysis. Unfortunately, given the 8-year sample period, we are limited in what we can say about tenure rates among new graduates. The median time to obtain tenure is greater than 8 years for both men and women, and our data are therefore inappropriate for a formal examination of the career trajectories of the subsample of recent graduates (although we can use the recent graduate subsample to examine exits rates; we do so in Section D).

In the first approach, we use the entire sample of faculty and we estimate a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member has tenure during year *t*. These year-by-year cross-sectional regressions help us understand potential changes over time. Explanatory variables are *Female*, *Citations*, *Top Pubs*, and *Other Pubs*. The disaggregation of publications into top and other publications (*Top Pubs* and *Other Pubs*, respectively) is important, given findings in Heckman and Moktan (2020) that, in the top-35 economics departments, publishing in a top-5 economics journal strongly predicts tenure rates. The regressions also include both PhD year and institution fixed effects, so we control for both cohort and the institution at which the faculty member is employed.

The results from the initial tenure analysis are in Table VI, Panel A. We observe a significant gender gap in tenure rates among male and female finance faculty during the first half of the sample period and that gap disappears by the end of the sample period. For example, the estimated coefficient of -0.045 on the *Female* dummy for 2009 implies that, all else equal, women are 4.5% less likely to be tenured than men. This is the gap that we observe after controlling for publications and citations, which are the most important variables in explaining tenure. By 2017, the estimated coefficient on *Female* is 0.007, which is statistically indistinguishable from zero. Figure 5 shows the estimated coefficients on the *Female* dummy over time, as well as differences between the time *t* coefficient and what we observe in 2009. Between 2009 and 2013, women are between 3.8% and

6.1% less likely to be tenured than men. By 2014, this gap is indistinguishable from zero and remains so through 2017. Thus, female representation among senior female faculty is, indeed, improving.[21]

[Insert Table VI here]

[Insert Figure 5 here]

The coefficients on the control variables in Table VI are also of interest. Not surprisingly, we find that the number of years since PhD, citations, top publications, and other publications are all positively related to tenure status. The estimated coefficient on *Other Pubs* publications is larger than the estimated coefficient on *Top Pubs* in the pooled regressions shown in Table VI, but this difference is not statistically significant. Still, it is somewhat curious that other publications are as important as top publications. One possible explanation is that evaluation standards differ within the sample of the top-100 schools. In Internet Appendix Table IA.VI, we repeat the Table VI Panel A analysis for the subsample of the top-30 schools. The estimated coefficients on both top and other publications are significant. The gap in relative importance is increasing over time, where only top publications matter by the end of the sample period. The estimated coefficient on top publications increases in magnitude over time, while the estimated coefficient on other publications goes from being statistically significant in 2009 to insignificant after 2015. Similar to Table VI and Figure 5, for

[21] The regressions in Table VI include institution fixed effects. In Panel A of Internet Appendix Table IA.VII, we replace institution fixed effects with the institution ranking variable. The results are similar to the findings in Table VI and in Figure 5. On average, we find slightly higher tenure rates of faculty at lower-ranked schools. Importantly, the estimated coefficients on all the other variables are similar to those in Table VI and in Figure 5. Given our choice of a linear probability model, in Panel B of Internet Appendix Table IA.VII, we also check that our results are robust to a logit specification. Similar to Panel A, we replace the institution fixed effects with the institution ranking variable. Again, the results are qualitatively similar to those shown in Table VI.

the subsample of top-30 schools, we find that women are 4.5% less likely to have tenure in the beginning of the sample period, and there is no significant difference between men and women by 2017.

Sarsons et al. (2021) reports that women receive less credit for coauthored work. In Panel B of Table VI, we repeat the Panel A regressions but we divide publications variables into solo-authored or coauthored publications. In addition, we follow Sarsons et al. (2021), and we interact all publications variables with *Female*, a dummy variable equal to one if the faculty member is female. As in Panel A, we find a negative and significant coefficient on the *Female* dummy that declines over time. The main difference is that the estimated direct effects of *Female* are larger than what we report in Panel A.

When we examine the interactions, unlike Sarsons et al. (2021), we do not find evidence that women are penalized for their coauthored work. The estimated coefficients on *Fem*TopCoauthor Pubs* and on *Fem*Other Coauthor Pubs* are both insignificant in all of the regressions shown. If anything, there is some evidence women receive more credit for their solo work (in the later years of the sample). Time-series variation may explain the difference between our coauthorship results and those in Sarsons et al. (2021). Specifically, the Sarsons et al. (2021) sample period is from 1985 through 2014. It ends precisely when our results show improvements in the gender gap. Separate from the gender findings, Panel B of Table VI shows that top coauthored publications are more important than top solo publications. It is possible that collaborations result in better papers (see for example, Hollis (2001)), although we do not examine this possibility here.

Table VII presents results of the tenure analyses using the second approach. In particular, we ask whether female faculty at top-100 schools are as likely as men to have tenure at exactly 6, 8, 10, and 12 years post-PhD. We emphasize that, to be included in the regressions, a faculty member must appear in the AcA data at least once in our sample period and the 6-, 8-, 10-, or 12-year mark post-graduation must occur during 2009–2017 sample period (thus, the analyses include only graduates between 1997 and 2011). We do not observe a significant gender gap at 8, 10, or 12 years post-PhD (Columns 3, 5, and 7, respectively). At 6 years post-PhD, the estimated coefficient of -0.086 in Column (1) of Table VII implies that, after controlling for research productivity, women are

8.6% less likely to have tenure by year 6.[22] This could occur because of discrimination, longer tenure clocks (for example, because of maternity leaves), or a tendency for women to exit the profession early in their careers. That we do not find important gender differences at longer horizons suggests that women take longer to obtain tenure but that catch-up occurs by year 8. It is also consistent with women who have experienced less favorable career outcomes exiting prior to year 8. Unfortunately, our data do not allow us to distinguish these. In Internet Appendix Figure IA.3, we show Kaplan-Meier curves for men and women that are consistent with the results in Table VII, where the likelihood of obtaining tenure for women is lower than it is for men until year 8.

[Insert Table VII here]

Columns (2), (4), (6), and (8) of Table VII show results using the extended specification based on Sarsons et al. (2021). Interestingly, the results suggest the negative effect of gender at the 6-year horizon is driven by female faculty with more publications that are not in top journals, both solo and coauthored.[23] The other estimated coefficients are similar to those in Column (1) and there

[22] The tenure regressions in Table VII employ a linear probability models. To check the robustness of the results to this specification, we estimate logit regressions where we replace the institution fixed effects with the continuous institution ranking variable. We proceed in two steps. First, we re-estimate the Table VII regressions using the continuous ranking variable as a control instead of the fixed effects to ensure that the findings are not due to the institution fixed effects. Then, we use the modified specification to estimate logit models. Internet Appendix Table IA.VIII shows results for the regressions in Table VII except that we replace the institution fixed effects with the institution ranking variable. In Internet Appendix Table IA.IX we estimate a logit model. The findings are all consistent with those in Table VII.

[23] In Internet Appendix Table IA.X, when we introduce the interaction of citations with gender, we find that the gender gap at year 6 following the PhD in the baseline specification (Column 1) comes from the sample

are no significant gender interactions at 8, 10, and 12 year horizons. In extended analysis (shown in Internet Appendix Table IA.XI), we further decompose the sample into late and early cohorts, where early cohort maps to faculty with PhD years that are less than the sample median for each regression. We find that the insignificant gender gap at the 10 and 12 year horizons appears to be driven by the later (more recent) cohort. The interaction between *female* and early cohort is significant and negative at those horizons. We interpret this as further evidence that the gender gap in tenure rates is decreasing over time.

C. Full Professor Status

The widely observed "leaky pipeline" shows fewer women at each stage of one's academic career (Buckles (2019) provides a survey). It is instructive to extend the tenure analyses shown in Tables VI and VII to examine the gender balance in the population of full professors.

Table VIII takes an approach similar to that in Table VI. We use the full sample of faculty (excluding Assistant Professors) and we estimate a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member is a full professor during year *t*. Unlike the results in Table VI, we find gender gaps in every year of the sample. Figure 6 shows that the gender gap among full professors remains statistically significant in every year, and, while the estimated magnitude of the gap appears to be declining, the decrease is not statistically significant. In other words, the gender gap at the top of the ladder within the academic finance profession remains.

[Insert Table VIII here]

[Insert Figure 6 here]

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of women with more citations; however, once we decompose publications into top/non-top and solo/coauthored, we continue to find that the negative gender effect comes from publications by women that are not in top journals. In later analysis, we use citations as a proxy for quality to examine the hypothesis that publications by women in these outlets are of lower quality.

In Table IX, we shift our focus to the likelihood that a faculty member is a full professor by *X* years after obtaining a Ph.D. For those faculty promoted to full professor during the sample period, the average number of years since Ph.D. in the year of the promotion is 14.83. In Table IX, we test whether the female faculty in our sample are as likely as their male counterparts to be full professors at exactly *X*=10, 12, 14, 16, 18, and 20 years after earning their PhDs. The estimated coefficients on the Female dummy are all negative, but they are significant at years 16, 18, and 20 post-PhD. Over these horizons, the estimates imply that female faculty are 13.1%, 21.3%, and 20.2% less likely than men to be full professors, respectively. These faculty also represent the later cohorts (they have PhD years between 1989 and 2001 versus PhD years between 1995 and 2007 for those in the *X*=10, 12, and 14 regressions). Unlike the evidence in Figure 6 for the full population of faculty, Table IX suggests that the gender balance among full professors may be improving over time.[24]

[Insert Table IX here]

D. Exits

[24] Internet Appendix Tables IA.XII and IA.XIII repeat the analyses in Tables 8 and 9 but we run regressions using the continuous ranking variable as a control instead of the fixed effects to ensure that the findings are not due to the institution fixed effects. Then, we use the modified specification to estimate logit models. The results are qualitatively similar, although the *female* dummy is only significant at the 18 and 20 year horizons (using continuous ranking variable) and significant at the 18 year horizon using logit specification. IA Figure 4 shows Kaplan-Meier failure estimates. From the figure, women are less likely to be full professors in most years (through year 20) post PhD. Unlike in IA Figure 3, which shows Kaplan-Meier estimates for tenure, women do not eventually catch up in attaining full professor status.

To understand the tenure patterns that we observe, it is useful to examine exits from the profession. In Internet Appendix Table IA.XIV and Internet Appendix Figures IA.5 and IA.6, we show t+1 faculty-year transitions, given that a faculty member is untenured as of year t.[25] At least unconditionally, women do not appear to be exiting the profession at higher rates than men. To examine this more formally, we conduct two sets of regression analyses. The first are analogous to the regressions in Table VII, in which we ask whether there are gender differences in obtaining tenure by year X. We are particularly interested in the 6-year horizon for the analysis of exits, because we observe significant differences in the tenure status of men and women at this horizon. In the second approach, which closely maps to the regressions that we would ideally run for tenure outcomes absent any data constraints, we follow all new faculty from their first academic placement to 3, 4, 5, and 6 years following receipt of their PhD, and we ask whether there are gender differences in exit at these horizons.

[Insert Table X here]

Column (1) of Table X provides results of analysis of exits by sample faculty as of 6 years post-PhD. We do not detect strong evidence that women are exiting the profession early. Low publication rates at top journals are the most important predictor of exit by year 6. Results of analyses in which we replace the institution fixed effects with the institution ranking variable (in Internet Appendix Table IA.XV, Column (1)) are similar. Results in Table X are also robust if we use a logit specification (Internet Appendix Table IA.XV , Column (2)). Columns (2) through (5) of

[25] Following Heckman and Moktan (2018), we define a lateral move as a movement to an institution within five ranks of the period t institution. Up (down) moves are defined as year $t+1$ movements to institutions that are five ranks higher (lower) than the period t institutions, and down moves are movements to institutions that are at least five ranks lower than the period t institution. Of individuals who obtain tenure, Internet Appendix Table IA.XIV shows that the majority obtain tenure at their period t institution and downward moves are much more common than lateral or upward moves. This is true for both men and women.

Table X focus on the subsample of recent graduates and shows exits by exactly 3, 4, 5, and 6 years post-PhD. We do not observe significant differences between men and women at any horizon.[26] The most important determinant of exit is low publication output in top journals.

E. Research output: Publications

So far, we have focused on differences between men and women in employer rank, tenure and full professor status, and exits. The gender gaps in career outcomes that we document in the previous analyses represent the part of the gender imbalance in the profession that is unexplained by differences in research productivity. Besides the gender gap, in all regressions, we find that the quantity of publications consistently predicts the outcome variables of interest. Therefore, a more formal look at publication differences between men and women will be instructive. Table III reports that women tend to publish less (unconditionally). If women in the profession tend to publish less than men, then these output differences contribute to some of the gender imbalance that we observe in the profession. In this section, we estimate panel regressions using the full sample of faculty from 2009-2017 to test for evidence of a gender gap in publications.

There are two important caveats in the analysis that follows. First, we do not consider potential gender bias in the publication process. For example, consistent with a higher bar for female authors, Card et al. (2020) report that, conditional on publication, female-authored papers in economics receive 25% more citations.[27] Second, we do not observe productive activities outside of

[26] Internet Appendix Table IA.XVI shows results of analysis analogous to Columns (2) through (5) of Table X except that we replace institution fixed effects with the ranking variable (Panel A) and estimate a logit model (Panel B). In both cases, we fail to find evidence that women exit early. In Internet Appendix Figure IA.7, we show Kaplan-Meier curves for exits by men and women that are consistent with the findings in Table X and with those in Internet Appendix Table IA.XVI.

[27] Moreover, Hengel and Moon (2020) finds that female-authored papers are better written than male-authored papers. In our analysis, we are only able to make statements about differences in publication rates.

publications. This is relevant if there is differential engagement in non-research tasks between men and women. Indeed, Guarino and Borden (2017) provide survey evidence that female faculty provide more activities per year than do men.

Table XI shows results from panel regressions in which the dependent variable is *Total Publications*, defined as ln(number of total publications+1) through year *t*. As in the previous regressions, the coefficient of interest is that on *Female*, a dummy equal to one if the faculty member is female. The other explanatory variables are *Tenured, YearsSincePhD*, as well as institution and PhD year fixed effects. Unlike the earlier cross-sectional regressions, the panel regressions include both PhD year fixed effects and *YearsSincePhD* to control for cohort and seniority effects, respectively. [28] We also do not include the *Citations* variable (a proxy for publication quality), given that the number of citations is partially a function of the number of publications.

Column (1) of Table XI does not include any fixed effects. We add Ph.D. year fixed effects in Column (2) and we include both Ph.D. year and institution fixed effects in Column (3). Column (3) is our preferred specification because the institution fixed effects help us control for different publication norms at a given institution, and the PhD year fixed effects allow us to absorb differential publication rates across cohorts within our 8-year sample of data.

[Insert Table XI here]

[Insert Figure 7 here]

[28]Because individual faculty members appear in the panel data across multiple years, the *YearsSincePhD* varies across time. For example, consider 2009 graduate at the start of the sample. In 2009, the individual's *YearsSincePhD* value is 0 in 2009, and it is 8 in 2017. Compare this with a 2001 graduate. For that individual, *YearsSincePhD* is 8 in 2009, and it is 16 in 2017. The PhD Year fixed effects account for average differences across cohorts, while *YearsSincePhD* accounts for potential changes in the outcome variable as a faculty member becomes more advanced in her career. *YearsSincePhD* is not included in the year-by-year cross-sectional regressions, nor is it included in regressions examining outcomes by Year X post-PhD.

Some useful observations can be gleaned from Table XI and from the results of the year-by-year analysis shown in Figure 7. First, consistent with the summary statistics, even after controlling for tenure status, PhD cohort, and current institution, women tend to publish less than men. For example, the estimated coefficient of -0.190 on *Female* in Column (3) implies that, all else equal, women produce roughly 17.3% fewer published papers than their male colleagues. And, unlike the earlier tables, Figure 7 shows no evidence that this publication gap is decreasing over time.[29] This is roughly in line with recent evidence in economics (Ghosh and Liu (2020)). In Column (4) of Table XI, we examine only the subsample of recent graduates. The estimated coefficient of -0.123 on the *Female* dummy implies that recently graduated women produce 11.5% fewer publications than male, a smaller gap than in the full sample. In Internet Appendix Table IA.XVIII, we repeat the Table XI analysis, except that we split the sample according to tenure status. Consistent with the findings in Columns (3) and (4) of Table XI, we find the publication gap to be less pronounced among untenured faculty.

To shed more light on the publication differences in Table XI, we decompose total publications into top publications and other publications, and then we further divide these into top solo publications, top coauthored publications, other solo publications, and other coauthored publications (these are the publication variables that we use in the extended specifications based on Sarsons et al. (2021)). Results are in Table XII. We find that the publication gap for women documented in Table XI, is mainly driven by coauthored publications in lower-tiered journals. We do not find statistically significant differences in either solo authored or coauthored publications at top journals. If female faculty are time-constrained (for example, Guarino and Borden (2017)), then it is possible that women publish fewer papers but they focus on their most impactful work. The fact that we do not observe important differences in top publications is consistent with this. We also investigate citations data. Internet Appendix Table IA.XIX Panel A shows results of regressions in

[29] The full results of the year-by-year regressions from Figure 7 are available in Appendix Table IA.XVII.

which we do not control for the number of publications. Unlike Table XI, we find no significant gender gap in citations during most years of the sample. This is surprising given that women publish fewer papers than men.[30] In Internet Appendix Table IA.XIX Panel B, we control for top and other publications and we find that women are cited more than men when they do publish. The same is true when we focus on citations only in top and other publications (Panels C and D, respectively). Consistent with Table XII, the results in Table IA.XIX suggest that women write higher quality of the papers that they do publish.

[Insert Table XII here]

F. Coauthors

It is clear that publications are related to more favorable career outcomes. The extended specifications in the tenure analysis (from Tables VI and VII) reveal that coauthored publications are even more important in explaining tenure status than solo-authored ones. It is possible that collaborations result in higher quality work, which is rewarded in the profession. Given that published coauthored work tends to be at least as important as solo-authored work in explaining tenure, it is useful to explore potential gender differences in coauthor networks.

We examine three potential network channels through which successful collaborations (i.e., publications) might occur: same gender, common cohort, and common institution. We examine the role of gender in coauthor networks because there is evidence from other fields that women tend to work with other women. If the same is true in the finance profession, then it would suggest that womens' coauthor networks are limited (since our data show that the profession is only 16% female). AFFECT (2018) presents data on the gender composition of coauthor teams on papers at finance journals and reports evidence of gender clustering on published work. Our analysis is complementary to theirs in that we focus at the individual faculty level (rather than at the publication

[30] We thank an anonymous referee for encouraging this line of analysis.

level, which places more weight on differences among very prolific faculty) and we ask whether a given faculty member is more or less likely to have a female coauthor. Doing so allows us to control for factors such as tenure status, institution, and cohort, and author status within the profession (i.e., citations), all of which might explain differential gender composition of coauthor teams. Outside of gender, we also examine the role of common cohorts, especially among faculty who studied at the same PhD institution at the same time. Both of these could be important social networking channels. We also look at potential collaborations among individuals working at the same institution at the same time, as research relationships might evolve through day-to-day contact within one's own department.

Table XIII shows results of panel regressions in which the dependent variable is the natural log of the number of coauthors of an individual faculty member through year *t*. We consider 6 coauthor variables. *All Coauthors* (Column 1) indicates all unique coauthors. *Top-100 Coauthors* (Column 2) indicates the number of unique coauthors from the sample of the top-100 schools. *Female Top-100 Coauthors* (Column 3) indicates the number of unique female coauthors from the top 100 schools. *Same Cohort* (Column 4) is the number of unique coauthors from top 100 schools who have obtained their PhDs within 4 years of the faculty member. *Same PhD and Cohort* (Column 5) indicates the number of unique coauthors from the same PhD program who have obtained their PhDs within 4 years of the faculty member. *Same Institution* (Column 6) indicates the number of unique coauthors who were employed by the same institution as the individual faculty member at some point during years *t-3* to *t-1* relative to the publication date.

[Insert Table XIII here]

In Panel A of Table XIII, we investigate whether there are gender differences in the size of coauthor networks after controlling for PhD cohort, institution, tenure status and citations. This first set of regressions allows us to characterize the size of an individual's network of successful collaborations, where success is defined as the number of publications. The estimated coefficient on the *Female* dummy captures the gender difference in the total number of coauthors in published

work. There are several useful observations from the Table XIII Panel A. First, women have significantly smaller coauthor networks. The estimated coefficient of -0.126 in Column (1) in Panel A of Table XIII implies that, all else equal, women have approximately 11.8% fewer coauthors than their male counterparts. Within the pool of the top-100 coauthors, we find that women have approximately 7.5% fewer coauthors than do men (Column 2).[31] The findings in Columns (1) and (2) might not be surprising, given the observations in Tables XI and XII that women tend to publish less. However, even though women tend to publish less, Column (3) of Panel A implies that women have 5.9% more female coauthors. That is, the second important observation from Panel A of Table XIII is that women are more likely to publish with other women. These findings are consistent with AFFECT (2018), but their methodology is different from ours. AFFECT (2018) focuses at the publication level, rather than at the individual faculty level, and their results could be driven by particularly prolific women. In Column (4) of Panel A, we ask whether there is a gender difference in the number of coauthors from one's own PhD cohort. The estimated coefficient of -0.081 on the *Female* implies that women have 7.7% fewer coauthors from within their own cohorts. This may indicate a social networking constraint. When we dive deeper and ask whether the same-cohort finding stems from fewer productive relationships from graduate school (Column 5), we find a negative but statistically insignificant estimated coefficient on *Female*. We also fail to find important gender differences in coauthorship with colleagues from one's own institution (Column 6). When we examine the estimated coefficients on the control variables in Panel A of Table XIII, we find that more seasoned faculty and faculty with more citations have larger coauthor networks.

In Panel B of Table XIII, we add controls for the number of publications. We do this because we want to understand the extent to which the gender differences in coauthor networks that we observe in Panel A are separate from the finding that women publish less. Different from Panel A, the estimated coefficients on the *Female* dummy in Panel B capture gender differences in the size of coauthor teams. In this second set of regressions, we observe insignificant estimated coefficients

[31] McDowell, Singell, and Slater (2006) also find that women are less likely to coauthor. This may, in part, explain research productivity differences between men and women.

on the *Female* dummy in both Columns (1) and (2), suggesting that women and men have similar coauthor teams when they do publish. However, we do find that coauthor teams of women tend to include other women. The estimated coefficient of 0.073 on the *Female* dummy in Column (3) of Panel B suggests that women publish with 7.6% more women on their coauthor teams (not including themselves). We also find that the coauthor teams of female faculty tend to include members from different PhD cohorts. The estimated coefficient of -0.061 on *Female* implies that women publish on teams that include 5.9% fewer coauthors from the same PhD cohort (Column 4). As in Panel A, the results in Panel B do not show a significant difference in same-cohort coauthors from the same graduate program or in coauthors employed by the same institutions.

To summarize, Panels A and B of Table XIII reveal that, even though women tend to publish less, they are more likely than men to have successful collaborations with other women. Given that the profession is comprised of less than 20% women, female faculty may be limited by the pool of potential collaborators. In addition, we find that the structures of collaboration networks differ in that women are less likely to have successful collaborations with others from their own cohorts. This difference might be important if, for example, coauthor characteristics are considered in promotion cases. However, interestingly, when we examine the subsample of recent graduates in Internet Appendix Table IA.XX, we do not observe statistically significant gender differences in coauthor networks, suggesting that the main findings are driven by more senior women. Consistent with this, when we sort the sample according to tenure status in Internet Appendix Table IA.XXI, we find that women tend to work with other women in both groups (untenured and tenured), but the subsample of tenured faculty is driving the same-cohort findings.

In all of the Table XIII regressions, we control for citations in order to account for a faculty member's status within the profession and any differences in the popularity of the individual's subfield. This is important because there are differences in the subject areas in which men and women publish. In our sample, 49.1% of men publish mainly in asset pricing (JEL code G1), while only 38.7% of women do. By contrast, 40.1% of women publish in mainly corporate finance and governance (JEL code G3), while only 29.6% of men do. Financial institutions and services (JEL code G2) is more balanced, accounting for 17.1% and 20.1% of all males and females, respectively.

As a further check that the observed differences in coauthor network structure are not due to subfield effects, we extend the regressions to include subfield controls, where an individual's subfield maps to the most frequent JEL code of all of the faculty member's published finance articles through year *t*. The results are in Internet Appendix Table IA.XXII and are similar to those in Table XIII.

G. Salary

Is there evidence of a gender wage gap in academic finance? Unconditional wage differences have been documented in other fields (for example, Binder et al. (2010); Monks and Robinson, (2000); Ginther and Hayes (1999)), but it is also the case that research productivity and academic rank explain much of this difference in pay. As a final exploration of potential gender differences in career outcomes within the academic finance profession, we obtain salary data for the faculty at 37 of the 60 public institutions in the sample. Most states have Freedom of Information Acts that require public employers to make public salary information for all employees. Our requests for salary data for the 2009–2017 period are fulfilled, at least in part, in the majority of cases. Internet Appendix Table IA.XXIII lists the institutions and years for which we have salary data. We use all available data in the analysis.

Table XIV and Figure 8 show results of regressions in which the dependent variable is the natural log of the faculty member's 9-month salary. We prefer the specification in Column (6) because it allows us to compare wages of faculty within the same institution, after controlling for their productivity and seniority. The point estimate of 0.038 in the pooled regressions in Column 6 suggest a gender wage gap of approximately 3.7% during the entire 2009–2017 sample period but it is not statistically significant. The wage gap is also insignificant in the subsample of recent graduates (Column 7).[32] However, consistent with the rank of employer and tenure regressions, Figure 8

[32] Ginter and Hayes (1999) report that salary differences can largely be explained by faculty rank. In Internet Appendix Table IA.XXV, we add faculty title to the tenure status and Ph.D. cohort controls, and all results are similar to those in Appendix Table IA.XXIV. When we control for rank by examining tenured and

shows that the pay gap is significant during some of the early years of the sample, and it goes away by 2015. Given the public scrutiny on salary information, it is somewhat surprising that any gap exists in any year. Interestingly, the largest estimated wage gaps are in 2011 and 2012, just as many schools began to recover from the financial crisis. It is possible that the post-financial crisis wage adjustments were faster for men than for women. The full year-by-year results of the regressions shown in Figure 8 are available in Internet Appendix Table IA.XXIV.

[Insert Table XIV here]

[Insert Figure 8 here]

When we examine the estimated coefficients on the other explanatory variables in the salary regressions, we find that salary is positively related to one's years of professional experience[33], number of citations, and number of top publications, consistent with the literature.[34] Overall, the salary analysis provides further evidence that the status of women in the profession has been improving over time. While the level of the gender pay gap in academic finance is much smaller than

untenured faculty separately in Internet Appendix Table IA.XXVI, we find a statistically significant gender wage gap of approximately 1.8% among untenured faculty, and a larger point estimate but statistically insignificant difference in salary among faculty with tenure.

[33] In Column (4) of Table XIV, we observe a negative relationship between *YearsSincePhD* and salary. This appears to be due to salary inversion, where salaries for new hires rise quickly over time (see, for example, Homer, Hunt and Runyon (2020) for evidence at business schools in the California State system). Once we control for cohort effects (which capture rising salaries of new hires), the relationship between experience and salary becomes positive, as expected.

[34] That salaries increase with the number of publications (especially top publications) is consistent with the findings of Swidler and Goldreyer (1998).

in the overall U.S. economy, the convergence that we are observing are in line with (Blau and Kahn (2017)).

IV. Conclusions

We present comprehensive data on female representation in the academic finance profession for the 2009–2017 period. Although the paper is primarily descriptive, the data allow us to provide new insights into questions related to gender balance in the profession. The data reveal that, after controlling for research productivity, women have positions at lower-ranked institutions and they are less likely to be full professors. We also find lower tenure rates between men and women during the early years of the sample. The same is true for the pay gap. In addition, we find significant research productivity differences between men and women, with women publishing fewer papers than their male counterparts. These differences are primarily driven by publications in lower-tiered journals. Gender gaps in placement, publications and salary have been documented in the social sciences and in STEM (see, for example, Long (1992); Kyvik and Teigen (1996); Bentley (2011); Ginther, Kahn and McCloskey (2016); Carr et al. (2018)). Our findings provide further evidence that these results appear to be systematic across disciplines.

A closer look at the portfolio of published work by finance faculty shows potentially important differences in the coauthor networks of women. When women coauthor, they are less likely to have coauthors from within their own cohort. They also tend to coauthor with other women. Given the importance of coauthored publications in explaining many of the outcome variables that we consider (i.e., tenure status, exits from the profession, and salary), the finding that women tend to coauthor with other women, along with the fact that women comprise only 16.0% of the sample of finance faculty, suggest that women have smaller publication networks. A larger flow of women into the profession could expand the pool of potentially successful collaborations.

Much has been written about the "leaky pipeline" in academia, where the representation of women declines at each stage of the academic career. Although we do not observe finance faculty at each stage in the pipeline, the analysis in this paper can still shed some light on the issue. If the low representation of women in finance were due entirely to small numbers of women entering the

profession from Ph.D. programs (i.e., a pipeline issue), then the women who do enter finance academia would see their careers progress along trajectories that are similar to those of men. Specifically, we would not observe important gender differences in career outcomes after controlling for research productivity.

Despite the evidence of gender gaps during the 2009-2017 sample period, we also find that the status of women in the profession is improving. In the last years of our sample, the evidence that women are at lower-ranked schools; are less likely to have tenure; or receive lower wages disappears. However, the research productivity gap remains. Mentoring programs might help reduce the publication gap. For example, Blau et al. (2010) conduct a randomized trial with mentoring interventions, in which junior women participate in small group workshops with senior female economists working in similar research areas. They report that the mentoring program increased publication rates in top journals among female economists by 25 percent. Of course, one implementation challenge within the academic finance profession could be the supply of mentors, given our finding of a persistent gender gap in the composition of full professors. Efforts to increase rates of promotion beyond tenure might increase gender balance within the profession, at all levels.

Female representation can be limited by bias. It can also be limited by conditions that do not allow female scholars to thrive (for example, limited networks). We do not take a stand on which of these factors drive many of the differences that we observe, but we hope that the basic facts in this paper will encourage future work to reduce gender gaps in the profession.

REFERENCES

AFFECT, 2018, Publication patterns of women in the finance profession, 2018 AFA (Philadelphia).

Antecol, Heather, Kelly Bedard, and Jenna Stearns, 2018, Equal but inequitable: Who benefits from gender-neutral tenure clock stopping policies, *American Economic Review* 108, 2420-41.

Babcock, Linda, Maria P. Recalde, Lise Vesterlund, and Laurie Weingart, 2017, Gender differences in accepting and receiving requests for tasks with low promotability, *American Economic Review* 107, 714-47.

Bayer, Amanda, and Cecilia Elena Rouse, 2017, Diversity in the economics profession: A new attack on an old problem, *Journal of Economic Perspectives* 30, 221–242.

Bentley, Peter, 2011, Gender differences and factors affecting publication productivity among Australian university academics, *Journal of Sociology* 48, 85-103.

Bertrand, Marianne, 2018, Coase lecture–The glass ceiling, *Economica* 85, 205-231.

Bettinger, Erin P., and Briget Terry Long, 2005, Do faculty serve as role models? The impact of instructor gender on female students, *American Economic Review* 95, 152-157.

Binder, Melissa, Kate Krause, Janie Chermak, Jennifer Thacher, and Julia Gilroy, 2010, Same work, different pay? Evidence from a US public university, *Feminist Economics* 16, 105-135.

Blau, Francine, Janet Currie, Rachel Croson, and Donna Ginther, 2010, Can mentoring help female assistant professors? Interim results from a randomized trial, *American Economic Review* 100, 348-52.

Blau, Francine, and Lawrence M. Kahn, 2017, The gender wage gap: Extent, trends, and explanations, *Journal of Economic Literature* 55, 789-865.

Boschini, Anne, and Anna Sjogren, 2007, Is team formation gender neutral? Evidence from coauthorship patterns*, Journal of Labor Economics* 25, 325–65.

Boustan, Leah, and Andrew Langan, 2019, Variation in women's success across PhD programs in economics, *Journal of Economic Perspectives* 33, 23–42.

Brogaard, Jonathan, Joseph Engelberg, and Edward Van Wesep, 2018, Do economists swing for the fences after tenure? *Journal of Economic Perspectives* 32, 179–194.

Buckles, Kasey, 2019, Fixing the leaky pipeline: Strategies for making economics work for women at every stage, *Journal of Economic Perspectives* 33, 23–42.

Card, David, Stefano DellaVigna, Patricia Funk, and Nagore Iriberri, 2020, Are referees and editors in economics gender neutral? *The Quarterly Journal of Economics* 135, 269-327.

Carrell, Scott E., Marianne E. Page, and James E. West, 2010, Sex and science: How professor gender perpetuates the gender gap, *The Quarterly Journal of Economics* 125, 1101-1144.

Carr, Phyllis L, Anita Raj, Samantha Kaplan, Norma Terrin, Janis Breeze, and Karen Freund, 2018, Gender differences in academic medicine: Retention, rank, and leadership comparisons from the National Faculty Survey, *Academic Medicine* 93, 1694-1699.

Chari, Anusha, and Paul Goldsmith-Pinkham, 2018, Gender representation in economics across topics and time: Evidence from the NBER Summer Institute, Unpublished manuscript, Yale University.

Currie, Russell, and Gurupdesh Prandher, 2011, Finance journal rankings and tiers: An active scholar assessment methodology, *Journal of Banking and Finance* 35, 7–20.

El-Alayli, Amani, Ashley Hansen-Brown, and Michelle Ceynar, 2018, Dancing backwards in high heels: Female professors experience more work demands and special favor requests, particularly from academically entitled students, *Sex Roles* 79, 136–150.

Fishe, P. H. Raymond, 1998, What are the research standards for full professor of finance? *Journal of Finance* 53, 1053–1079.

Ghosh, Pallab, and Zexuan Liu, 2020, Coauthorship and the gender gap in top economics journal publications*, Applied Economics Letters* 27, 580-90.

Ginther, Donna K, 2006, The Economics of Gender Differences in Employment Outcomes in Academia, *National Academy of Sciences (US) Committee on Maximizing the Potential of Women in Academic Science and Engineering.*

Ginther, Donna K., and Katy Hayes, 1999, Gender Differences in Salary and Promotion in the Humanities, *American Economic Review*, 89(2): 397–402.

Ginther, Donna K., Shulamit Kahn, and Jessica McCloskey, 2016, Gender and academics, in Palgrave Macmillan (eds): *The New Palgrave Dictionary of Economics* (Palgrave Macmillan, London).

Goldin, Claudia, 2014, A grand gender convergence: Its last chapter, *American Economic Review* 104, 1091-1119.

Guarino, Cassandra, and Victor Borden, 2017, Faculty service loads and gender: Are women taking care of the academic family? *Research in Higher Education* 58, 672–694.

Heckman, James, and Sidharth Moktan, 2020, Publishing and promotion in economics: The tyranny of the top five. *Journal of Economic Literature* 58, 419-70.

Hengel, Erin, and Eunyoung Moon, 2020, Gender quality at top economics journals, Unpublished manuscript, University of Liverpool.

Hollis, Aidan, 2001, Co-authorship and the output of academic economists, *Labor Economics* 8, 503-530.

Homer, Pamela, Herbert Hunt, and Lowell Runyon, 2020, Faculty salary inversion, compression, and market salary gap in California state university business schools, *Employee Responsibilities and Rights Journal.*

Kahn, Shulamit, 1993, Gender differences in academic career paths of economists, *American Economic Review* 83, 52–56.

Kyvik, Svein, and Mari Teigen (1996). Child care, research collaboration, and gender differences in scientific productivity, *Science, Technology, & Human Values* 21, 54-71.

Lim, Jaeguem, and Jonathan Meer, 2020, Persistent effects of teacher-student gender matches, *Journal of Human Resources* 55, 809-835

Long, Scott J., 1992, Measures of sex differences in scientific productivity, *Social Forces* 71(1), 159-78.

Lundenberg, Shelly and Jenna Stearns, 2019, Women in Economics: Stalled progress, *Journal of Economic Perspectives* 33(1), 3–22.

McDowell, John M., Larry D. Singell, Jr., and Mark Stater, 2006, Two to tango? Gender differences in the decisions to publish and coauthor, *Economic Inquiry* 44(1), 153–168.

McPherson, Michael A., Myungsup Kim, Megan Dorman, and Nishelli Perera, 2013, Research output at US economics departments, *Applied Economics Letters* 20(9), 889-892.

Monks, James, and Michael Robinson, 2000, Gender and racial earnings differentials in academic labor markets, *Economic Inquiry* 38(4), 662–71.

Nosek, Brian A., Frederick L. Smyth, N. Sriram, Nicole M. Lindner, Thierry Devos, Alfonso Ayala, et, 2009, National differences in gender–science stereotypes predict national sex differences in science and math achievement, *Proceedings of the National Academy of Sciences* 106(26), 10593-10597.

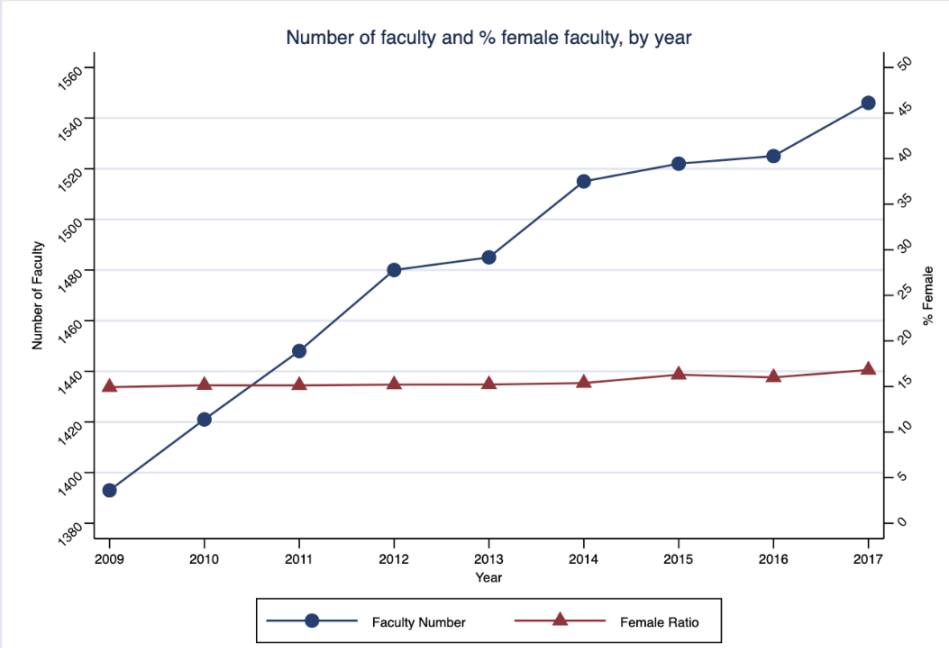
Reuben, E., Sapienza, P., & Zingales, L. (2014). How stereotypes impair women's careers in science, *Proceedings of the National Academy of Sciences*, 111(12), 4403-4408.

Sarsons, Heather, Klarita Gerxhani, Ernesto Rueben and Arthur Schram, 2021, Gender differences in recognition for group work, *Journal of Political Economy* 129, 101-147

Swidler, Steve, and Elizabeth Goldreyer, 1998, The value of a finance journal publication, *Journal of Finance* 53, 351–363.

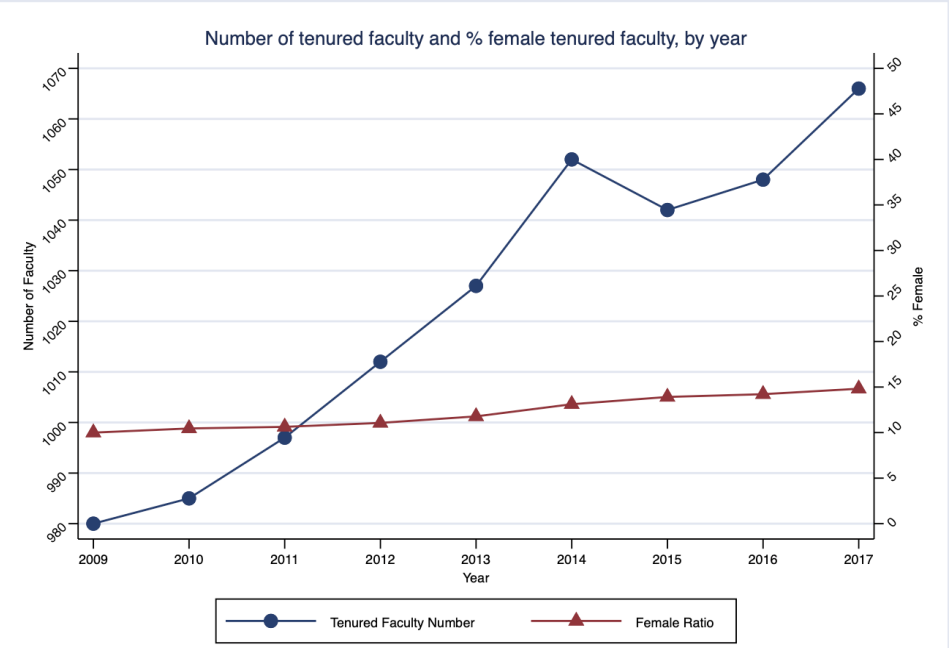
Winslow, Sarah, 2010, Gender inequality and time allocations among academic faculty, *Gender & Society* 24, 769-793

Figure 1: Sample of Finance Faculty, by Year



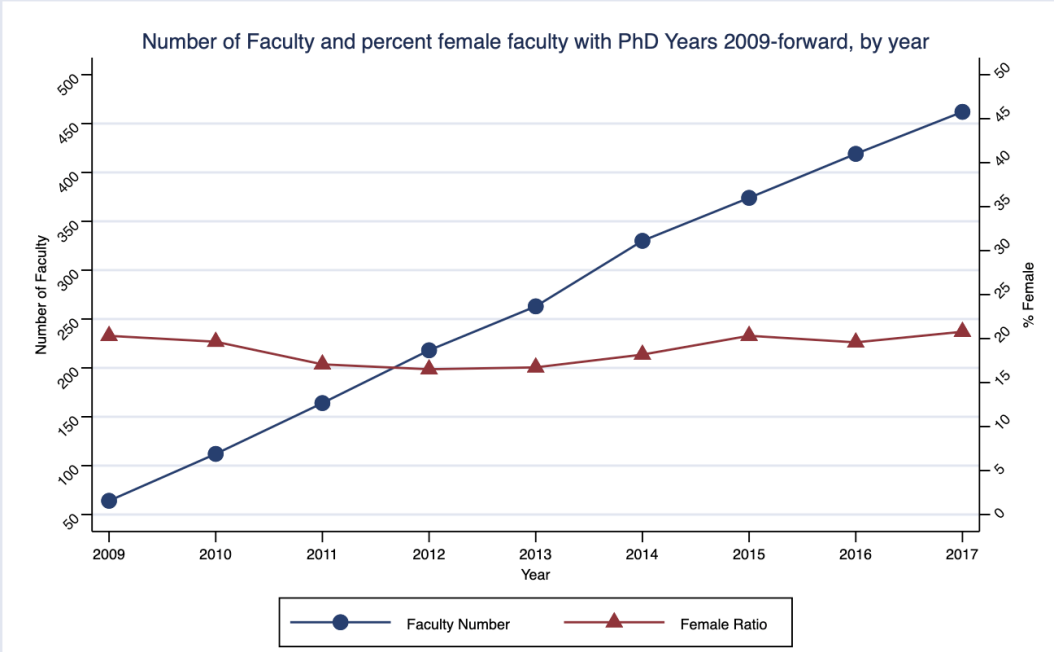
This figure shows the number of faculty and the percentage of faculty who are female for each year of the sample.

Figure 2: Sample of Tenured Finance Faculty, by Year



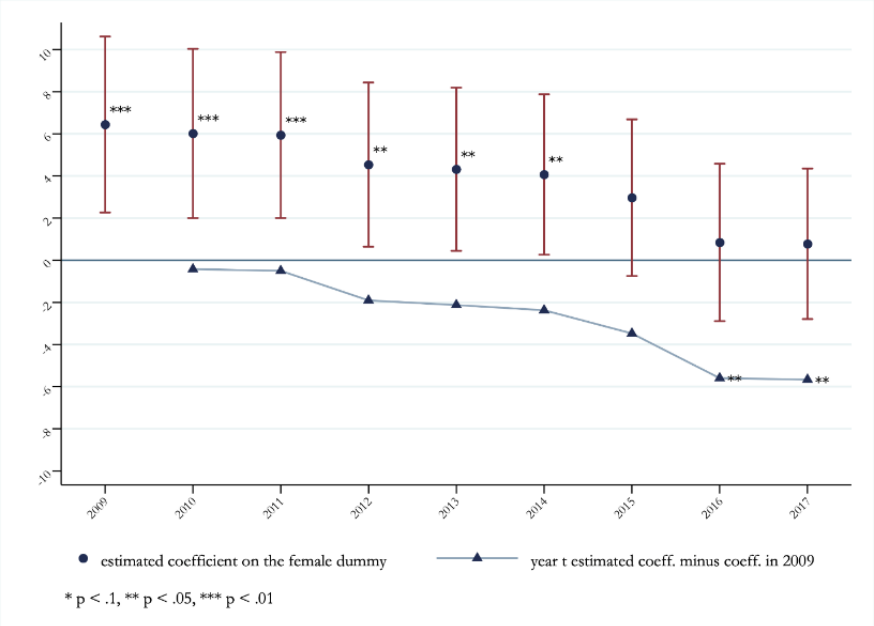
This figure shows the number of tenured faculty and the percentage of tenured faculty who are female for each year of the sample.

Figure 3: Faculty with PhD years from 2009 onward



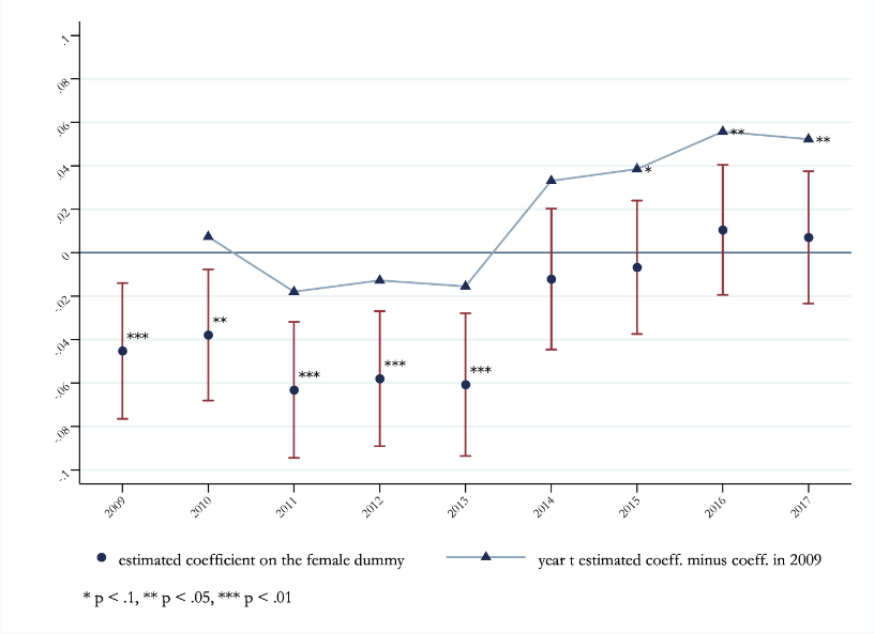
This figure shows the number of faculty with PhD years from 2009-2017 ("recent graduates") and the percentage of recent graduates who are female for each year of the sample.

Figure 4: Are female faculty more likely to be employed by lower-ranked schools?



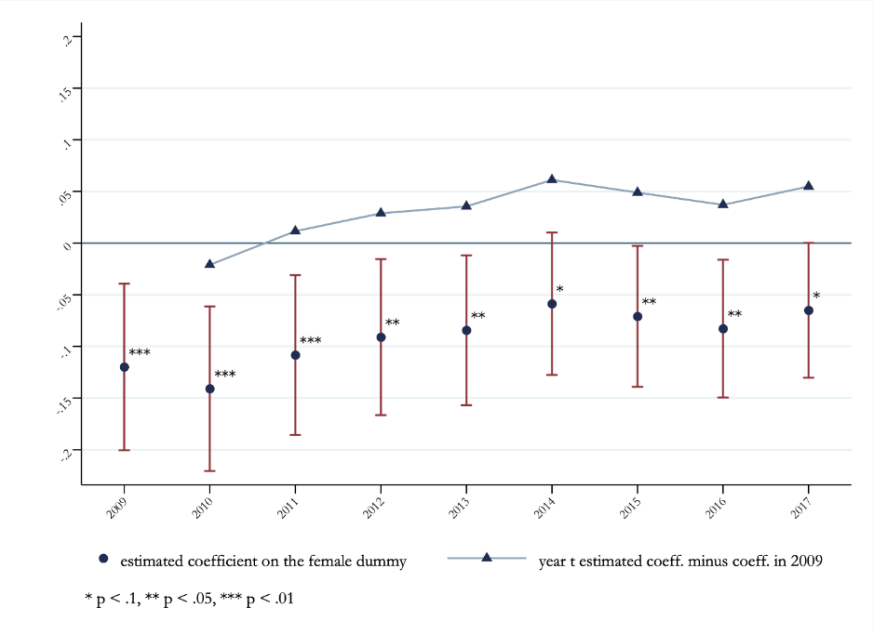
The figure shows the point estimates and 95% confidence intervals around the coefficients on the *female* dummy for each year in the Table IV regressions. The figure also plots the difference between the estimated coefficient on the *female* dummy in year *t* and the estimated coefficient in 2009.

Figure 5: Are female faculty equally likely to have tenure? Year-by-year analysis



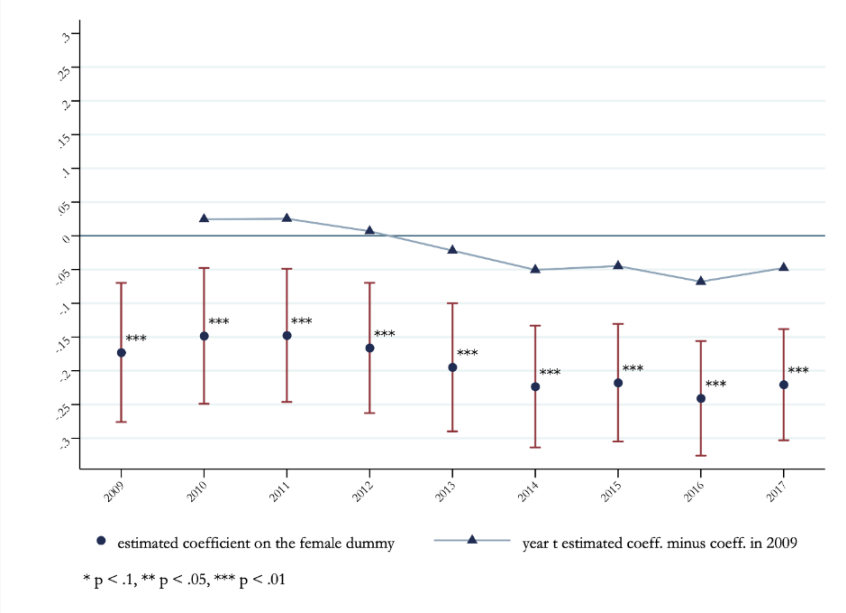
The figure shows the point estimates and 95% confidence intervals around the coefficients on the *female* dummy for each year in the Table VI regressions. The figure also plots the difference between the estimated coefficient on the *female* dummy in year *t* and the estimated coefficient in 2009.

Figure 6: Are female faculty equally likely to be full professors? Year-by-year analysis



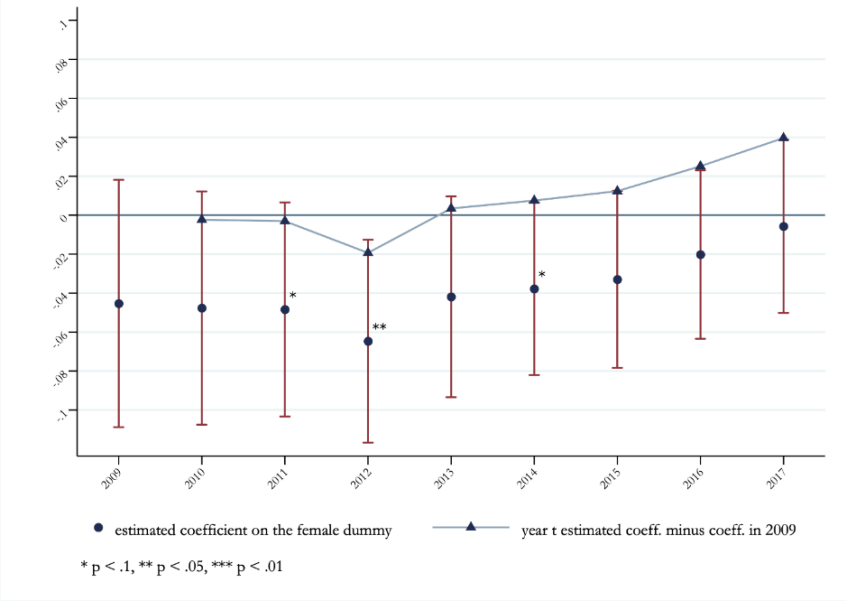
The figure shows the point estimates and 95% confidence intervals around the coefficients on the *female* dummy for each year in the Table VIII regressions. The figure also plots the difference between the estimated coefficient on the *female* dummy in year *t* and the estimated coefficient in 200

Figure 7: Are there gender differences in research output? Year-by year analysis



The figure shows the point estimates and 95% confidence intervals around the coefficients on the *female* dummy for each year of regressions in which the dependent variable is *Total Publications*, defined as the number of total publications by the faculty member through year *t*.[35]

Figure 8: Is There Evidence of a Gender Wage Gap? Year-by year analysis



The figure shows the point estimates and 95% confidence intervals around the coefficients on the *female* dummy for each year of regressions in which the dependent variable is ln(9-month salary). The figure also

[35] The full specification and estimated coefficients are in Internet Appendix Table IA.XVII.

plots the difference between the estimated coefficient on the *female* dummy in year *t* and the estimated coefficient in 2009.[36]

[36] The full specification and estimated coefficients are in Internet Appendix Table IA.XXIV.

Table I: Sample of Top-100 Business Schools

This table lists the sample of top-100 business schools. To be included in the sample, the school must appear in the *U.S. News & World Report* list of top-100 U.S. business schools at least once during the 2009–2017 sample period. We also require coverage in the Academic Analytics database for at least one year during sample period. *Mean Ranking* is the average *U.S. News & World Report* ranking during the sample period. *Publication Tier* is based on the alternative ranking variable, equal to the quartile of research productivity, where productivity is measured as the average (across all sample years) number of top publications by finance faculty members at the institution. The top publication measure is calculated in each year as the mean number of top publications by finance faculty at the institution. *%Female* is the fraction of faculty-year observations where the faculty member is female.

Institution	**Mean Ranking**	**Publication Tier**	**All Faculty**		**Tenured Faculty**	
			Faculty-Yr Obs.	% Female	Faculty-Yr Obs.	% Female
Harvard University	1.2	1	270	11.1%	165	6.7%
Stanford University	1.6	1	143	11.9%	99	9.1%
University of Pennsylvania	2.9	2	361	11.1%	233	7.7%
MIT	4.2	1	168	16.7%	106	24.5%
University of Chicago	4.2	1	300	9.3%	200	4.5%
Northwestern University	4.6	1	243	19.3%	148	18.2%
UC Berkeley	7.0	1	183	19.1%	143	22.4%
Dartmouth College	8.2	1	89	10.1%	64	12.5%
Columbia University	8.7	1	339	11.5%	253	7.1%
Yale University	10.8	1	148	16.9%	101	13.9%
New York University	11.6	1	367	7.6%	267	3.4%
University of Michigan	12.3	1	156	12.2%	114	10.5%
Duke University	12.4	1	148	12.8%	112	8.0%
University of Virginia	12.4	2	227	19.8%	199	18.6%
UCLA	14.8	1	143	6.3%	115	6.1%
Cornell University	16.2	1	131	22.1%	83	15.7%
UT Austin	16.7	1	216	12.5%	144	13.9%
Carnegie Mellon	17.9	2	124	10.5%	77	0.0%
UNC Chapel Hill	18.9	2	198	14.6%	125	12.0%
Wash U (St. Louis)	20.8	2	151	10.6%	77	0.0%
Emory University	21.0	1	105	5.7%	71	0.0%
Indiana University	22.0	3	224	24.1%	144	25.0%
Georgetown University	23.0	2	156	18.6%	116	15.5%
USC	23.9	2	286	6.6%	161	2.5%

Institution	Mean Ranking	Publication Tier	All Faculty		Tenured Faculty	
			Faculty-Yr Obs.	% Female	Faculty-Yr Obs.	% Female
The Ohio State	26.1	1	143	26.6%	90	35.6%
University of Minnesota	27.8	2	127	13.4%	77	6.5%
Vanderbilt University	27.9	1	90	0.0%	62	0.0%
University of Notre Dame	28.3	2	217	10.6%	154	8.4%
Georgia Tech	28.3	2	87	10.3%	53	11.3%
University of Washington	28.4	2	157	12.7%	113	15.9%
Arizona State University	28.9	2	172	26.2%	121	19.8%
University of Wisconsin	29.2	2	124	15.3%	96	13.5%
Brigham Young University	31.4	3	152	0.0%	118	0.0%
Rice University	31.8	2	115	15.7%	78	23.1%
Texas A&M University	33.1	3	107	8.4%	75	5.3%
University of Rochester	36.8	1	112	17.0%	68	7.4%
University of Florida	39.8	2	128	0.0%	97	0.0%
UT Dallas	39.8	2	154	15.6%	94	10.6%
Boston University	40.1	3	159	8.2%	97	2.1%
UC Davis	40.2	1	56	30.4%	46	26.1%
University of Illinois	40.2	2	192	15.1%	106	0.9%
Michigan State	40.7	2	141	16.3%	113	8.0%
Penn State	41.8	2	169	15.4%	114	12.3%
Boston College	42.0	1	180	13.9%	138	13.8%
University of Maryland	42.3	1	174	12.6%	117	1.7%
Purdue University	43.7	1	91	40.7%	49	38.8%
UC Irvine	46.1	1	52	34.6%	38	31.6%
University of Georgia	53.8	3	150	16.0%	70	12.9%
University of Arizona	56.1	2	90	18.9%	44	20.5%
George Washington	56.1	4	137	25.5%	116	21.6%
Rutgers	57.4	3	190	16.8%	123	15.4%
Northeastern University	58.3	4	159	34.0%	109	22.9%
Babson College	58.7	3	116	33.6%	105	34.3%
University of Missouri	59.9	3	84	28.6%	49	20.4%
University of Arkansas	60.0	4	87	4.6%	62	0.0%
Baylor University	61.6	4	155	0.6%	135	0.0%
University of Pittsburgh	62.3	2	86	19.8%	61	26.2%
UMASS Amherst	62.3	3	81	16.0%	65	10.8%
University of Connecticut	62.3	4	153	7.2%	105	4.8%
University of Alabama	62.9	4	159	2.5%	119	3.4%

Institution	Mean Ranking	Publication Tier	All Faculty		Tenured Faculty	
University of S. Carolina	64.1	3	137	13.1%	100	18.0%
University of Tennessee	66.0	4	98	11.2%	81	12.3%
Iowa State University	66.7	4	121	22.3%	70	18.6%
Case Western Reserve	67.2	3	87	19.5%	62	6.5%
North Carolina State	69.9	4	49	20.4%	37	8.1%
William & Mary	70.8	4	113	23.9%	91	13.2%
University of Utah	71.0	2	132	19.7%	96	16.7%
Louisiana State University	72.0	3	96	25.0%	67	10.4%
University of Oklahoma	73.6	2	88	14.8%	65	0.0%
University of Cincinnati	74.8	3	89	2.2%	67	0.0%
SUNY Buffalo	76.6	3	101	5.0%	51	0.0%
University of Louisville	77.0	4	62	27.4%	54	20.4%
Syracuse University	77.1	4	105	21.0%	78	11.5%
U. Colorado (Boulder)	77.9	3	124	8.9%	81	11.1%
University of Miami	80.1	3	112	16.1%	78	16.7%
CUNY	81.1	3	268	23.5%	214	18.7%
Auburn University	82.6	4	116	19.8%	97	18.6%
Stevens Inst. of Tech.	83.0	4	28	39.3%	9	0.0%
Fordham University	88.8	4	222	27.0%	134	14.2%
SUNY Binghamton	91.0	3	66	4.5%	41	0.0%
University of Kentucky	92.0	3	100	23.0%	63	20.6%
University of Oregon	92.6	3	93	21.5%	38	23.7%
University of Houston	93.3	3	165	9.7%	126	7.1%
SUNY Albany	94.0	4	53	50.9%	39	43.6%
Oklahoma State University	94.6	4	111	11.7%	90	12.2%
Drexel University	96.2	2	133	11.3%	106	7.5%
Chapman University	98.9	4	38	15.8%	24	0.0%
University of Mississippi	99.7	4	88	20.5%	54	33.3%
University of Delaware	100.0	4	101	31.7%	68	23.5%
University of Kansas	100.6	3	76	5.3%	51	2.0%
Howard University	101.1	4	62	30.6%	45	15.6%
Clemson University	101.5	4	82	23.2%	55	20.0%
American University	104.1	3	89	39.3%	79	36.7%
San Diego State University	104.6	4	133	15.8%	100	10.0%
Mississippi State	106.7	4	64	4.7%	44	6.8%
Northern Arizona U.	107.0	4	41	17.1%	33	21.2%
UC Riverside	109.0	3	70	37.1%	27	14.8%

Table II: Summary Statistics

This table shows the number of unique faculty members in the sample. *All Institutions* is the full sample of business schools, defined as any school that appears in the *U.S. News & World Report*'s list of top-100 U.S. business schools list at least once during the 2009–2017 sample period and is also covered in the Academic Analytics database at least once during the sample period. "Recent graduates" are those faculty who completed their PhDs during the 2009-2017 sample period. *Top30* is the subsample of schools with a *U.S. News & World Report* ranking of 30 or better at any point during the sample period. *Top10* is the subsample of schools with a rank of 1-10 in *U.S. News & World Report* at least once during the sample period. *Publication Tier* 1 is based on the alternative ranking variable and indicates those institutions in the first quartile of research productivity, measured as the average number of top publications by faculty employed by the institution. *Public* and *Private* indicate public and private institutions, respectively. *%Female* is the fraction of faculty-year observations where the faculty member is female.

	All Institutions		**Top 30**		**Top 10**	
	Total	*%Female*	*Total*	*%Female*	*Total*	*%Female*
# Unique Faculty	2,009	16.0%	979	14.3%	411	13.1%
# Faculty with Tenure for All Years, 2009–2017	1,058	9.7%	511	8.8%	223	9.9%
# Faculty Untenured for All Years, 2009–2017	681	21.7%	341	20.2%	140	17.1%
# Recent Graduates	545	20.4%	270	19.6%	101	17.8%
# Faculty Obtaining Tenure during 2009–2017	309	24.3%	142	21.1%	54	14.8%
# Faculty Promoted to Full during 2009–2017	216	19.0%	120	15.8%	57	19.3%
	Male	***Female***	***Male***	***Female***	***Male***	***Female***
# Years since PhD in Tenure Year	8.62	8.71	7.94	8.30	7.33	8.88
# Years since PhD in promotion year for Faculty promoted to Full during 2009–2017	14.83	14.93	13.28	13.74	12.39	11.36

Table II con'td

	Publication Tier 1		**Public**		**Private**	
	Total	*%Female*	*Total*	*%Female*	*Total*	*%Female*
# Unique Faculty	610	15.1%	1,177	16.7%	904	15.7%
# Faculty with Tenure for All Years, 2009–2017	319	10.0%	617	11.5%	482	9.1%
# Faculty Untenured for All Years, 2009–2017	216	21.6%	402	20.1%	326	23.9%
# Recent Graduates	162	21.0%	320	17.8%	245	22.9%
# Faculty Obtaining Tenure during 2009–2017	87	18.4%	199	26.1%	110	20.9%
# Faculty Promoted to Full during 2009–2017	82	24.4%	118	22.9%	90	13.3%
	Male	***Female***	***Male***	***Female***	***Male***	***Female***
# Years since PhD in Tenure Year	7.73	8.63	8.41	8.62	8.99	8.91
# Years since PhD in promotion year for Faculty promoted to Full during 2009–2017	13.08	14.05	16.32	16.42	13.17	12.17

Table III: Faculty Publications

This table shows the mean number of publications by faculty members in the sample. *Total Publications* are all publications in the business and economics category, as defined by Scopus. *Top Publications* are all publications in the top-3 finance and top-5 economics journals. The top-3 finance journals are *Journal of Finance*, *Journal of Financial Economics*, and *Review of Financial Studies*. The top-5 economics journals are *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Review of Economic Studies*, and *Quarterly Journal of Economics*. Table II defines "All," "Top 30," "Top 10," "Pub. Tier 1," "Public," and "Private" institution categories. "At Tenure Year" includes those faculty who obtain tenure during the 2009–2017 period and shows the publication record as of the year in which the faculty member receives tenure. "At Promotion to Full Year" includes those faculty who are promoted to full during the 2009–2017 period and shows the publication record as of the year in which the faculty member is promoted to full professor. "Recent graduates" are those faculty who completed their PhDs during the 2009-2017 sample period.

	All		Top 30		Top 10	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Total Publications						
All Faculty	14.33	7.24	15.41	8.65	18.21	9.06
Untenured Faculty	2.47	2.25	2.54	2.08	3.31	2.60
Tenured Faculty	19.00	11.43	20.91	13.52	24.20	13.59
At Tenure Year	8.09	6.47	9.07	6.27	9.89	7.63
At Promotion to Full Year	13.95	12.29	14.03	12.74	15.05	12.00
Recent Graduates	1.60	1.15	1.75	0.91	2.21	0.78
Top Publications						
All Faculty	4.64	2.83	6.78	4.56	8.41	4.73
Untenured Faculty	1.18	0.96	1.57	1.26	2.25	1.58
Tenured Faculty	6.00	4.39	9.01	7.01	10.89	6.93
At Tenure Year	3.79	2.67	5.63	3.97	6.63	5.25
At Promotion to Full Year	6.12	5.84	8.20	8.00	9.44	8.36
Recent Graduates	0.82	0.53	1.06	0.60	1.53	0.37
Top Solo-Authored Publications						
All Faculty	0.67	0.36	1.08	0.64	1.43	0.68
Untenured Faculty	0.19	0.15	0.27	0.24	0.44	0.30
Tenured Faculty	0.86	0.54	1.42	0.94	1.82	0.95
At Tenure Year	0.48	0.44	0.76	0.83	0.98	1.13
At Promotion to Full Year	0.64	0.49	0.84	0.58	0.98	0.73
Recent Graduates	0.12	0.09	0.16	0.11	0.27	0.13
Other Solo-Authored Publications						
All Faculty	2.38	1.00	2.99	1.44	4.00	1.64
Untenured Faculty	0.40	0.34	0.42	0.38	0.61	0.51
Tenured Faculty	3.15	1.56	4.09	2.23	5.36	2.44
At Tenure Year	1.20	1.03	1.37	1.33	1.33	1.38
At Promotion to Full Year	1.65	1.32	1.58	1.68	1.61	1.64
Recent Graduates	0.26	0.16	0.26	0.16	0.34	0.23

Table III cont'd

	Pub. Tier 1		Public		Private	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Total Publications						
All Faculty	18.78	9.43	13.54	7.26	15.28	7.22
Untenured Faculty	3.13	2.26	2.27	2.18	2.71	2.34
Tenured Faculty	25.17	14.85	18.01	11.01	20.17	12.14
At Tenure Year	9.16	7.06	7.73	6.29	8.71	6.87
At Promotion to Full Year	15.05	12.70	13.80	13.04	14.18	10.92
Recent Graduates	2.04	0.86	1.41	1.27	1.83	1.02
Top Publications						
All Faculty	8.72	5.36	3.48	2.67	6.02	3.06
Untenured Faculty	1.95	1.46	0.85	0.86	1.59	1.08
Tenured Faculty	11.48	8.32	4.53	4.00	7.75	5.04
At Tenure Year	5.93	5.06	3.08	2.42	5.00	3.22
At Promotion to Full Year	9.03	8.35	5.00	5.48	7.31	7.25
Recent Graduates	1.28	0.61	0.61	0.49	1.07	0.57
Top Solo-Authored Publications						
All Faculty	1.40	0.73	0.41	0.30	0.98	0.45
Untenured Faculty	0.35	0.29	0.12	0.16	0.28	0.13
Tenured Faculty	1.83	1.07	0.53	0.40	1.25	0.76
At Tenure Year	0.93	0.81	0.34	0.40	0.72	0.52
At Promotion to Full Year	1.08	0.65	0.51	0.41	0.80	0.67
Recent Graduates	0.20	0.16	0.06	0.09	0.18	0.08
Other Solo-Authored Publications						
All Faculty	3.81	1.38	1.81	0.85	3.05	1.23
Untenured Faculty	0.56	0.44	0.35	0.39	0.46	0.27
Tenured Faculty	5.14	2.10	2.39	1.18	4.05	2.20
At Tenure Year	1.54	1.19	1.11	1.10	1.36	0.87
At Promotion to Full Year	1.95	1.40	1.59	1.19	1.71	1.67
Recent Graduates	0.28	0.22	0.21	0.19	0.31	0.13

Table IV: After Controlling for Research Productivity, Are Female Faculty More Likely to Be Employed by Lower-Ranked Institutions?

This table shows results of OLS regressions in which the dependent variable is *Institution Rank*, defined as the mean *U.S. News & World Report* ranking over the 2009–2017 sample period. Lower values of *institution rank* are associated with higher school ranking (i.e., a value of 1 maps to the highest ranked school). The explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Tenured*, a dummy equal to one if the faculty member has tenure during year *t*; *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. Columns (1) through (9) show results from year-by-year regressions. We also include PhD year fixed effects (estimated but not reported in the table). *% female faculty* is the percentage of women of all faculty year observations. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	6.443***	6.019***	5.943***	4.537**	4.318**	4.071**	2.969	0.847	0.778
	(2.131)	(2.048)	(2.008)	(1.987)	(1.975)	(1.941)	(1.895)	(1.905)	(1.820)
Tenured	-0.723	1.457	6.398*	5.009	0.207	3.579	2.496	3.421	2.828
	(3.758)	(3.677)	(3.456)	(3.428)	(3.232)	(3.202)	(3.263)	(3.331)	(3.128)
Citations	-2.741***	-1.859**	-1.921**	-2.137**	-1.911**	-2.102**	-1.856**	-1.775**	-0.873
	(0.876)	(0.852)	(0.842)	(0.841)	(0.830)	(0.836)	(0.831)	(0.836)	(0.808)
Top Pubs	-16.128***	-18.103***	-17.924***	-17.835***	-17.591***	-17.325***	-17.807***	-17.573***	-18.708***
	(1.473)	(1.409)	(1.355)	(1.354)	(1.339)	(1.332)	(1.316)	(1.309)	(1.268)
Other Pubs	9.006***	8.187***	7.885***	7.317***	7.305***	7.539***	7.761***	7.912***	7.220***
	(1.231)	(1.192)	(1.159)	(1.162)	(1.143)	(1.146)	(1.149)	(1.156)	(1.123)
N	1,362	1,393	1,422	1,455	1,460	1,490	1,495	1,499	1,520
% Female Faculty	14.90	15.08	15.05	15.12	15.14	15.30	16.25	16.01	16.71
Adj. *R*-Sq.	0.301	0.327	0.327	0.326	0.319	0.320	0.323	0.314	0.325
PhD Yr. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table V: Are Female Faculty More Likely to Be Employed by Lower-Ranked Institutions at exactly 1, 4, 8, 12, and 16 years Post-PhD?

This table shows results from estimating a linear probability model in which the dependent variable is *Institution rank* at exactly *X* years post-PhD. *Institution rank* is defined as the mean *U.S. News & World Report* ranking over the 2009–2017 sample period. *X* years post-PhD is measured at *X* = 1, 4, 8, 12, and 16. Explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Tenured*, a dummy equal to 1 if the faculty member is tenured (Columns 3 through 5 only); *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. *% female faculty* is the percentage of women of all faculty year observations. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

	1 Year	4 Years	8 Years	12 Years	16 Years
	(1)	(2)	(3)	(4)	(5)
Female	1.606	9.625***	6.828**	6.440**	6.616**
	(3.503)	(3.055)	(2.726)	(2.752)	(2.998)
Tenured			4.588	8.872**	7.827
			(2.823)	(3.700)	(4.885)
Citations	-0.436	0.427	1.816	2.570*	1.198
	(2.267)	(1.435)	(1.326)	(1.336)	(1.384)
Top Pubs	-17.992***	-23.206***	-26.227***	-26.999***	-24.455***
	(5.311)	(3.318)	(2.680)	(2.435)	(2.387)
Other Pubs	1.832	8.665***	5.638***	4.681**	4.794**
	(4.564)	(2.477)	(2.008)	(1.982)	(2.026)
N	482	526	560	542	543
% Female Faculty	19.09	22.05	23.39	21.59	18.6
Adj. *R* - Squared	0.040	0.217	0.327	0.341	0.327
PhD Year Fixed	Yes	Yes	Yes	Yes	Yes

Table VI: Are Female Faculty Equally Likely to Have Tenure?

This table shows results from a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member has tenure during year *t*. Explanatory variables in Panel A are: *Female*, a dummy equal to one if the faculty member is female; *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(the number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. Panel B shows results from the extended specification following Sarsons et al. (2021), in which we divide the top publication and other publication variables into solo-authored and coauthored publications and we interact all publications variables with the *Female* dummy. The disaggregated publications variables are *Top Coauth Pubs*, defined as the number of coauthored publications in the top-3 finance and top-5 economics journals through year *t*; *Other Coauth Pubs*, all coauthored publications that are not in top journals; *Top Solo Pubs*, the number of solo-authored publications in the top-3 finance and top-5 economics journals through year *t*; and *Other Solo Pubs*, equal to all solo-authored publications through year *t* that are not in top journals. We transform each of the publication variables into ln(publication variable +1). All regressions include both PhD year and institution fixed effects (fixed effects are estimated, but not reported). *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Panel A (Base Specification)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	-0.045***	-0.038**	-0.063***	-0.058***	-0.061***	-0.012	-0.007	0.011	0.007
	(0.016)	(0.015)	(0.016)	(0.016)	(0.017)	(0.017)	(0.016)	(0.015)	(0.016)
Citations	-0.001	-0.002	0.008	0.005	0.007	0.011	0.019***	0.022***	0.018**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Top Pubs	0.033***	0.037***	0.030***	0.029**	0.027**	0.032**	0.024**	0.030***	0.032***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
Other Pubs	0.041***	0.036***	0.029***	0.045***	0.045***	0.043***	0.031***	0.016*	0.021**
	(0.010)	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
N	1,361	1,392	1,422	1,455	1,460	1,490	1,495	1,499	1,520
% female faculty	14.92	15.09	15.05	15.12	15.14	15.3	16.25	16.01	16.71
Adj. *R*-Squared	0.826	0.834	0.818	0.817	0.790	0.788	0.803	0.811	0.793

Panel B (Extended Specification)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	-0.085***	-0.078***	-0.130***	-0.095***	-0.114***	-0.046	-0.009	-0.003	-0.014
	(0.026)	(0.027)	(0.029)	(0.029)	(0.031)	(0.029)	(0.027)	(0.027)	(0.028)
Citations	0.003	0.000	0.009	0.007	0.011	0.013*	0.021***	0.023***	0.020***
	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Top Coauth Pubs	0.020*	0.028**	0.028**	0.024**	0.022*	0.028**	0.019	0.029**	0.030***
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
Fem*Top Coauth Pubs	0.021	0.026	0.029	0.020	-0.006	-0.013	-0.007	-0.001	-0.019
	(0.023)	(0.022)	(0.022)	(0.022)	(0.023)	(0.023)	(0.021)	(0.021)	(0.021)
Other Coauth Pubs	0.027***	0.021**	0.015	0.032***	0.023**	0.032***	0.028***	0.007	0.015
	(0.010)	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Fem*Other Coauth Pubs	0.028	0.012	0.022	-0.012	0.033	0.030	-0.002	-0.012	-0.001
	(0.021)	(0.020)	(0.021)	(0.020)	(0.021)	(0.020)	(0.019)	(0.019)	(0.018)
Top Solo Pubs	0.025*	0.021	0.004	0.013	0.009	0.004	0.005	-0.003	-0.007
	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)
Fem*Top Solo Pubs	-0.040	-0.029	0.028	0.020	0.004	0.075	0.061	0.106**	0.129***
	(0.043)	(0.042)	(0.044)	(0.043)	(0.045)	(0.046)	(0.043)	(0.043)	(0.044)
Other Solo Pubs	0.007	0.016*	0.014	0.008	0.020*	0.007	-0.003	0.010	0.001
	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)	(0.011)	(0.010)	(0.010)	(0.011)
Fem*Other Solo Pubs	-0.003	0.026	0.017	0.074**	0.037	-0.030	-0.013	0.007	0.025
	(0.034)	(0.033)	(0.034)	(0.033)	(0.035)	(0.034)	(0.033)	(0.032)	(0.032)
N	1,361	1,392	1,422	1,455	1,460	1,490	1,495	1,499	1,520
% Female Faculty	14.92	15.09	15.05	15.12	15.14	15.3	16.25	16.01	16.71
Adj. *R*-Squared	0.825	0.833	0.818	0.817	0.790	0.787	0.802	0.811	0.793

Table VII: Are Female Faculty Equally Likely to Have Tenure at exactly 6, 8, 10, and 12 Years Post-PhD?

This table shows results from estimating a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member is tenured by exactly *X* years post-PhD, where *X* = 6, 8, 10, or 12. Explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. In Columns (2), (4), (6), and (8), we estimate the extended specification where the top publications and other publications variables are divided into solo-authored or coauthored publications. We follow Sarsons et al. (2021) and interact these publications variables with the *Female* dummy. All specifications include institution and PhD year fixed effects (estimated, but not reported in the table). < 0.1; **p < 0.05; ***p < 0.01.

	6 Years		8 Years		10 Years		12 Years	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	-0.086**	0.070	-0.029	0.021	-0.019	-0.094	-0.030	-0.042
	(0.035)	(0.067)	(0.043)	(0.088)	(0.040)	(0.078)	(0.036)	(0.072)
Citations	-0.013	-0.014	-0.001	-0.001	0.071***	0.068***	0.057***	0.054***
	(0.017)	(0.016)	(0.021)	(0.020)	(0.019)	(0.019)	(0.017)	(0.017)
Top Pubs	0.199***		0.313***		0.197***		0.115***	
	(0.039)		(0.047)		(0.042)		(0.037)	
Other Pubs	0.137***		0.210***		0.123***		0.112***	
	(0.027)		(0.030)		(0.027)		(0.026)	
Top Coauth Pubs		0.197***		0.304***		0.189***		0.117***
		(0.037)		(0.044)		(0.041)		(0.035)
Fem*Top Coauth Pubs		-0.069		-0.031		0.037		0.027
		(0.061)		(0.067)		(0.054)		(0.051)
Other Coauth Pubs		0.122***		0.189***		0.124***		0.091***
		(0.030)		(0.035)		(0.032)		(0.028)
Fem*Other Coauth Pubs		-0.126**		-0.032		0.009		0.015
		(0.056)		(0.060)		(0.055)		(0.051)
Top Solo Pubs		0.127**		0.139**		0.051		0.043
		(0.050)		(0.059)		(0.050)		(0.043)
Fem*Top Solo Pubs		0.097		0.078		0.111		0.028
		(0.114)		(0.137)		(0.113)		(0.102)
Other Solo Pubs		0.175***		0.142***		0.039		0.080**
		(0.042)		(0.047)		(0.038)		(0.033)
Fem*Other Solo Pubs		-0.214**		-0.026		0.036		-0.106
		(0.107)		(0.106)		(0.095)		(0.086)
N	520	520	556	556	554	554	536	536
% Female Faculty	23.65	23.65	23.56	23.56	22.92	22.92	21.64	21.64
Adj. *R*-Squared	0.204	0.237	0.416	0.423	0.543	0.542	0.624	0.624
PhD Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Institution FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table VIII: Are Female Faculty Equally Likely to Be Full Professors?

This table shows results from a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member is a full professor during year *t*. The sample excludes assistant professors. The explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *YearsSincePhD*, the natural log of the number of calendar years since the faculty member earned a PhD; *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. PhD Year and institution fixed effects are estimated, but not reported. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female	-0.120***	-0.141***	-0.108***	-0.091**	-0.084**	-0.059*	-0.071**	-0.083**	-0.065*
	(0.041)	(0.041)	(0.039)	(0.039)	(0.037)	(0.035)	(0.035)	(0.034)	(0.033)
Citations	0.039**	0.042***	0.050***	0.052***	0.057***	0.042***	0.034**	0.031**	0.037**
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Top Pubs	0.048*	0.062**	0.057**	0.067***	0.062***	0.071***	0.090***	0.101***	0.098***
	(0.025)	(0.025)	(0.024)	(0.024)	(0.024)	(0.023)	(0.024)	(0.023)	(0.023)
Other Pubs	0.117***	0.108***	0.104***	0.105***	0.098***	0.104***	0.106***	0.101***	0.097***
	(0.021)	(0.021)	(0.020)	(0.020)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
N	953	958	974	988	1,006	1,031	1,021	1,029	1,048
% Fem. Faculty	9.86	10.33	10.47	10.83	11.53	12.9	13.71	14.09	14.69
Adj. *R*-Squared	0.484	0.459	0.462	0.452	0.476	0.477	0.471	0.476	0.468
PhD Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Institution F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IX: Are Female Faculty Equally Likely to be Full Professors at exactly 10, 12, 14, 16, 18, and 20 Years Post-PhD?

This table shows results from estimating a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member is a full professor by exactly *X* years post-PhD, where *X* = 10, 12, 14, 16, 18 and 20. Explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; and *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. All specifications include institution and PhD year fixed effects and standard errors are clustered by year and unique faculty identifier. < 0.1; **p < 0.05; ***p < 0.01.

	10 years	12 years	14 years	16 years	18 years	20 years
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.017	-0.061	-0.041	-0.131*	-0.213**	-0.202**
	(0.047)	(0.058)	(0.066)	(0.069)	(0.084)	(0.082)
Citations	-0.002	0.048	0.106***	0.093**	0.127***	0.140***
	(0.026)	(0.031)	(0.035)	(0.036)	(0.038)	(0.034)
Top Pubs	0.205***	0.222***	0.263***	0.161***	0.100*	0.086
	(0.055)	(0.061)	(0.059)	(0.060)	(0.059)	(0.055)
Other Pubs	0.115***	0.130***	0.182***	0.192***	0.147***	0.138***
	(0.033)	(0.041)	(0.044)	(0.045)	(0.050)	(0.046)
N	297	307	322	321	300	306
% Female faculty	21.55	19.87	18.01	15.58	13.00	12.09
Adj. *R*-Squared	0.405	0.445	0.417	0.435	0.355	0.401
PhD Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Institution FE	Yes	Yes	Yes	Yes	Yes	Yes

Table X: Do Women Exit Early?

This table shows results of a linear probability model in which the dependent variable is a dummy variable equal to one if the faculty member exits to the government, the private sector, or a nonladder position by 6 years post-PhD (for Full Sample) and by exactly 3, 4, 5, and 6 years post-PhD (for the Recent Graduates subsample only). Recent Graduates are faculty with ladder positions at a top-100 school and who earned PhDs between 2009 and 2017. Explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Citations*, defined as ln(number of citations+1), where the number of citations is calculated through year *t*; *Top Pubs*, defined as ln(number of top publications+1), where the number of top publications is the total number of the top-3 finance and top-5 economics publications through year *t*; *Other Pubs*, defined as ln(the number of other publications+1), where the number of other publications is defined as publications through year *t* in all outlets that are not top publications. Institution and PhD year fixed effects are included, but not reported in the table. Standard errors are clustered by year and unique faculty identifier. $p <$ 0.1; **$p < 0.05$; ***$p < 0.01$.

	Full Sample	Recent Graduates			
	(1)	(2)	(3)	(4)	(5)
	6 Years	3 Years	4 Years	5 Years	6 Years
Female	0.043	-0.005	-0.005	0.037	0.086
	(0.033)	(0.026)	(0.044)	(0.058)	(0.075)
Citations	0.004	0.002	-0.003	0.038	0.023
	(0.016)	(0.011)	(0.019)	(0.026)	(0.037)
Top Pubs	-0.117***	-0.038	-0.083*	-0.200***	-0.236***
	(0.035)	(0.029)	(0.047)	(0.062)	(0.075)
Other Pubs	-0.016	-0.020	-0.023	-0.079*	-0.081
	(0.025)	(0.025)	(0.037)	(0.045)	(0.057)
N	508	357	282	232	162
% Female Faculty	23.82	18.49	18.09	17.24	20.99
Adj. *R*-Squared	0.058	0.058	0.082	0.043	0.084
PhD Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Institution Fixed Effects	Yes	Yes	Yes	Yes	Yes

Table XI: Gender Differences in Research Output

This table shows results of panel regressions in which the dependent variable is *Total Publications*, defined as ln(number of total publications+1), where the number of total publications by the faculty member are calculated through year *t*. The explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Tenured* a dummy equal to one if the faculty member has tenure during year *t*; and *YearsSincePhD*, the natural log of the number of calendar years since the faculty member earned a PhD. Column (1) shows results of a pooled regression without fixed effects. Column (2) is identical to Column (1) but includes PhD year fixed effects. Column (3) includes both PhD year and institution fixed effects. Column (4) shows regression results for the subsample of recent graduates (i.e., faculty earning PhDs between 2009 and 2017). Fixed effects are estimated, but not reported. Standard errors are clustered by year and unique faculty identifier. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

	Full Sample			Recent Graduates
	(1)	(2)	(3)	(4)
Female	-0.180***	-0.221***	-0.190***	-0.123**
	(0.036)	(0.036)	(0.037)	(0.046)
Tenured	0.733***	0.599***	0.619***	0.800***
	(0.038)	(0.036)	(0.034)	(0.129)
YearsSincePhD	0.594***	0.648***	0.659***	0.519***
	(0.025)	(0.033)	(0.035)	(0.043)
N	13,145	13,145	13,145	2,349
Num. of Unique Faculty	1,985	1,985	1,985	540
% Female Faculty	15.92	15.92	15.92	20.19
Adj. *R*-Squared	0.630	0.659	0.707	0.469
PhD Year Fixed Effects	No	Yes	Yes	Yes
Institution Fixed Effects	No	No	Yes	Yes

Table XII: Gender Differences in Research Output, by Publication Type

This table shows results of panel regressions that are identical to those in Column (3) of Table XI, except the *Total Pubs* variable is decomposed into publication type. Dependent variables are: *Top Pubs*, the total number of the top-3 finance and top-5 economics publications through year *t*; *Other Pubs*, the publications through year *t* in all outlets that are not top publications; *Top Coauth Pubs*, the number of coauthored publications in the top-3 finance and top-5 economics journals through year *t*; *Other Coauth* publications, all coauthored publications that are not in top journals; *Top Solo Pubs* is the number of solo-authored publications in the top-3 finance and top-5 economics journals through year *t*; and *Other Solo Pubs*, all solo-authored publications through year *t* that are not in top journals. We transform each of the publication variables into ln(publication variable+1). The explanatory variables are: *Female*, a dummy equal to one if the faculty member is female; *Tenured,* a dummy equal to one if the faculty member has tenure during year *t*; and *YearsSincePhD*, the natural log of the number of calendar years since the faculty member earned a PhD. Institution and PhD year fixed effects are estimated, but not reported in the table. All regressions are pooled and include data for all faculty-years. Standard errors are clustered by year and unique faculty identifier. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

	Top Pubs	Other Pubs	Top Solo	Other Solo	Top Coauth	Other Coauth
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.066	-0.181***	0.003	-0.073*	-0.072	-0.164***
	(0.042)	(0.040)	(0.024)	(0.034)	(0.043)	(0.039)
Tenured	0.497***	0.550***	0.108***	0.187***	0.519***	0.515***
	(0.040)	(0.041)	(0.022)	(0.038)	(0.041)	(0.038)
YearsSincePhD	0.476***	0.403***	0.113***	0.105***	0.434***	0.378***
	(0.026)	(0.034)	(0.009)	(0.013)	(0.028)	(0.035)
N	13,145	13,145	13,145	13,145	13,145	13,145
Unique Faculty	1,985	1,985	1,985	1,985	1,985	1,985
% Female Faculty	15.92	15.92	15.92	15.92	15.92	15.92
Adj. *R*-Squared	0.591	0.639	0.336	0.366	0.550	0.595
PhD Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Institution FE	Yes	Yes	Yes	Yes	Yes	Yes

Table XIII: Gender Differences in Coauthor Networks

This table shows results of panel regressions in which the dependent variable is the number of unique coauthors through year *t*, where *All Coauthors* (Column 1) indicates the number of unique coauthors; *Top-100 Coauthors* (Column 2) indicates the number of unique coauthors from the sample of top-100 schools; *Female Top-100 Coauthors* (Column 3) indicates the number of unique female coauthors from top-100 schools; *Same Cohort* (Column 4) indicates the number of unique coauthors through year *t* from top-100 schools who have graduated within 4 years of the faculty member; *Same PhD and Cohort* (Column 5) indicates the number of unique coauthors from the same PhD program who have obtained their PhDs within 4 years of the faculty member; and *Same Institution* (Column 6) indicates the number of unique coauthors who were employed by the same institution as the faculty member at some point during years *t-3* to *t-1* relative to the publication date. We transform each of the coauthor variables into ln(coauthor variable +1). In Panel A, the explanatory variables are: *Female*, *Tenured, YearsSincePhD*, and *Citations*. In Panel B, we add publications variables *Top Pubs* and *Other Pubs* as explanatory variables. These explanatory variables are defined in Table XII. All standard errors are clustered by year and unique faculty identifier. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

Panel A: Full Sample (Baseline Specification)

	All Coauthors	Top 100	Female Top 100	Same Cohort	Same PhD and Cohort	Same Institution
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.126***	-0.073*	0.057**	-0.081**	-0.034	-0.014
	(0.029)	(0.034)	(0.024)	(0.030)	(0.021)	(0.024)
Tenured	0.055	0.097**	-0.028	0.148***	0.059**	0.169***
	(0.033)	(0.034)	(0.024)	(0.035)	(0.022)	(0.030)
YearsSincePhD	0.072**	0.027	-0.010	0.031	0.020	0.084**
	(0.024)	(0.022)	(0.013)	(0.018)	(0.011)	(0.025)
Citations	0.334***	0.248***	0.080***	0.123***	0.038***	0.059***
	(0.008)	(0.009)	(0.008)	(0.008)	(0.005)	(0.007)
N	13,176	13,176	13,176	13,176	13,176	10,421
Num Unique Faculty	1,989	1,989	1,989	1,989	1,989	1,909
% Female Faculty	15.99	15.99	15.99	15.99	15.99	16.29
Adj. *R*-Squared	0.778	0.609	0.226	0.428	0.214	0.252
PhD Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Institution FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Full Sample (With Publication Controls)

	All	Top 100	Fem. Top 100	Same Cohort	PhD & Cohort	Same Inst.
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.024	-0.020	0.073**	-0.061*	-0.033	0.016
	(0.025)	(0.032)	(0.024)	(0.030)	(0.021)	(0.024)
Tenured	-0.062**	0.042	-0.045	0.129***	0.060**	0.137***
	(0.026)	(0.033)	(0.024)	(0.034)	(0.022)	(0.029)
YearsSincePhD	0.116***	0.068***	0.004	0.052**	0.025*	0.100***
	(0.021)	(0.020)	(0.013)	(0.017)	(0.011)	(0.026)
Citations	0.116***	0.059***	0.018*	0.027*	0.018*	-0.027**
	(0.010)	(0.012)	(0.009)	(0.012)	(0.008)	(0.010)
Top Pubs	0.250***	0.448***	0.154***	0.273***	0.075***	0.173***
	(0.019)	(0.027)	(0.019)	(0.024)	(0.016)	(0.022)
Other Pubs	0.542***	0.185***	0.052**	0.040*	-0.017	0.122***
	(0.016)	(0.023)	(0.016)	(0.020)	(0.015)	(0.016)
N	13,176	13,176	13,176	13,176	13,176	10,421
Num Unique Faculty	1,989	1,989	1,989	1,989	1,989	1,909
% Female Faculty	15.99	15.99	15.99	15.99	15.99	16.29
Adj. *R*-Squared	0.866	0.675	0.255	0.471	0.226	0.293
PhD Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Institution FE	Yes	Yes	Yes	Yes	Yes	Yes

Table XIV: Is There Evidence of a Gender Wage Gap?

This table shows results of panel regressions in which the dependent variable is the natural log of the faculty member's 9-month salary. The explanatory variables are defined in Table IV. Columns (1) through (3) include only the female dummy and various fixed effects. Columns (4) through (6) include controls. All standard errors are clustered by year and unique faculty identifier. *p < 0.1; **p < 0.05; ***p < 0.01.

	Full Sample						Recent Grads
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	-0.052	-0.057	-0.057*	-0.065*	-0.052*	-0.038	-0.014
	(0.033)	(0.033)	(0.027)	(0.028)	(0.027)	(0.024)	(0.013)
Tenured				-0.055	0.014	0.040	0.044
				(0.030)	(0.028)	(0.024)	(0.026)
YrsSincePhD				-0.131***	0.000	0.029	0.044***
				(0.019)	(0.021)	(0.017)	(0.008)
Citations				0.046***	0.050***	0.042***	0.009*
				(0.013)	(0.013)	(0.011)	(0.005)
Top Pubs				0.171***	0.159***	0.104***	0.030*
				(0.025)	(0.025)	(0.023)	(0.014)
Other Pubs				0.002	-0.007	0.029	-0.003
				(0.017)	(0.017)	(0.016)	(0.009)
N	3,614	3,614	3,614	3,614	3,614	3,614	661
Unique Faculty	624	624	624	624	624	624	173
% Female	17.15	17.15	17.15	17.15	17.15	17.15	19.08
Adj. *R*-Sq.	0.004	0.181	0.478	0.424	0.513	0.652	0.824
PhD Year FE	No	Yes	Yes	No	Yes	Yes	Yes
Inst. FE	No	No	Yes	No	No	Yes	Yes